massport

GUIDE TO TENANT CONSTRUCTION

Massport Owned Properties - 2025 Edition

This Guide to Tenant Construction is dedicated to Jennifer Revill for her steadfast work ethic and her unwavering dedication to our tenants and to the success of their projects.

PART 1- TENANT ALTERATION AND CONSTRUCTION PROCESS

PART 2- GENERAL REQUIREMENTS

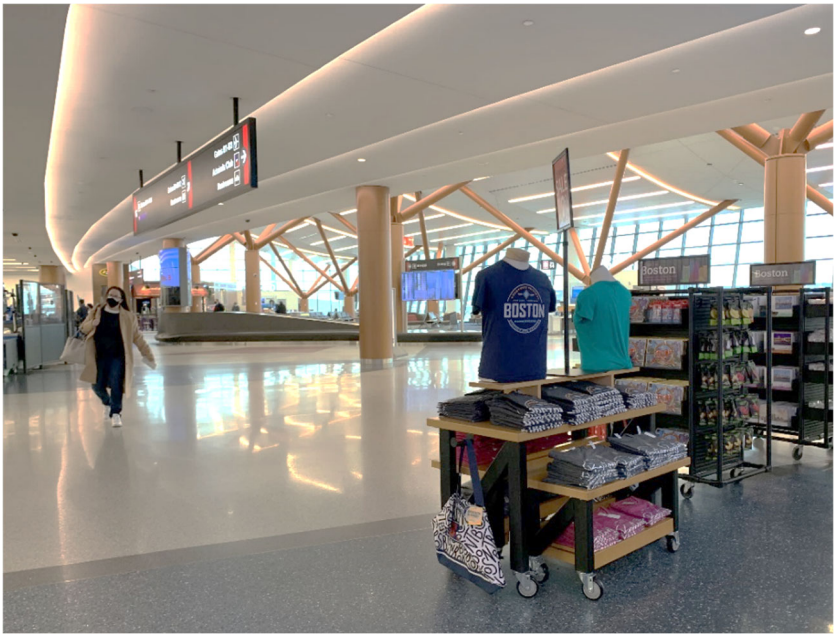
PART 3- DESIGN AND CONSTRUCTION REQUIREMENTS

PREFACE

The Massachusetts Port Authority ("Massport" or alternatively the "Authority") is a dynamic entity, and its properties are subject to continual improvement through construction and alterations by tenants and developers. The Authority's Tenant Alteration Application ("TAA") process is the platform for collaboration between Massport and its tenants and licensees looking to construct and improve their leaseholds and licensed premises at Logan International Airport ("Logan"), Worcester Regional Airport, Hanscom Field, the Boston Fish Pier. For third party ground lease tenants and development projects in Boston and Massachusetts see **Guide to Tenant Construction – Third Party Ground Lease Tenants - 2025 Edition**. This process shall also apply to construction activities of third parties who require access and occupancy of the Authority's property. Therefore, as used herein, the term "tenants" shall mean and include third parties to who the Authority grants a license or right of entry to access the Authority's property.

This Guide to Tenant Construction (the "GTC") was created to assist the Authority's tenants and licensees with the planning, design, and execution of their projects. It is intended to be only a guideline, and is not inclusive of all code requirements governing construction activities and operations. Although Massport will make every effort to assist tenants in maintaining regulatory compliance, it is the tenant's responsibility to ensure its construction activities meet, or exceed, all applicable statutes, code requirements, ordinances and regulations. Massport shall not be liable for a tenant's failure to comply with any applicable requirements.

This edition updates the previous version of the GTC (2023) and will be updated periodically as requirements are added, deleted, or changed. For the most current version of the GTC, and related forms, please refer to the Massport website at:
http://www.massport.com/massport/business/capital-improvements/important-documents/
or contact the Massport Tenant Alterations at TAA@massport.com.



Terminal B Pier B, Logan Airport

PART 1 – TENANT ALTERATION AND CONSTRUCTION PROCESS

1. INTRODUCTION

1.1 Purpose of GTC

This Guide to Tenant Construction (GTC) has been prepared to assist tenants seeking to construct, improve or alter their leased spaces. It outlines scalable requirements and procedures for all tenant alterations undertaken at Massport properties.

Unless otherwise noted, "Tenant" as used in this GTC may also refer to leaseholders, licensees, grantees of rights of entry onto Authority property and agents acting on the Tenant's behalf (e.g., architects, engineers, contractors, etc.)

1.2 How to Use the GTC

A. Massport has developed the GTC to provide instructions to tenants seeking to improve or alter their leased spaces.

Part 1 provides tenants with a step-by-step guide to improving or altering their leased spaces ("Tenant Alterations"). Serving as a "roadmap" to Massport's Tenant Alteration Application (TAA) process, this section will help tenants determine:

- The likely approval path for proposed Tenant Alterations
- Key process steps for getting Tenant Alterations reviewed, approved, constructed, and closed out.

Part 2 presents the general requirements and policies applicable to Tenant Alterations, including:

- General terms and conditions
- Insurance requirements
- Applicable codes and laws

Part 3 defines the design and construction requirements governing Tenant Alterations.

B. The GTC is not intended to address every type of condition or detail individual tenants may encounter in the course of their projects. It is the Tenant's responsibility to establish familiarity with the base building design and with individual building elements unique to its leasehold(s) prior to initiating design and construction of Tenant Alterations.

1.3 Tenant Alteration Process Overview

A. An overview of the Tenant Alteration process for Massport-owned properties is presented in Exhibit 1-1. As shown, all proposed Tenant Alterations (other than that which Massport considers to be routine maintenance) require advance approval through either the Tenant Work Plan Application process or the TAA process. For complete details, refer to Section 2 ().

B. The review and approval process for Tenant Alterations for Third Party Ground Lease Tenants is described in the Guide to Tenant Construction – Third Party Ground Lease Tenants.

C. Regardless of the application path for the intended alteration, the Tenant shall comply with the following:

1. The Tenant shall engage a qualified architect or engineer, or other professional as appropriate, licensed in the Commonwealth of Massachusetts, for the preparation of the design, working drawings, calculations, specifications, and construction contract documents as required by the most recent edition of the Massachusetts State Building Code, 780 CMR (the "State Building Code").

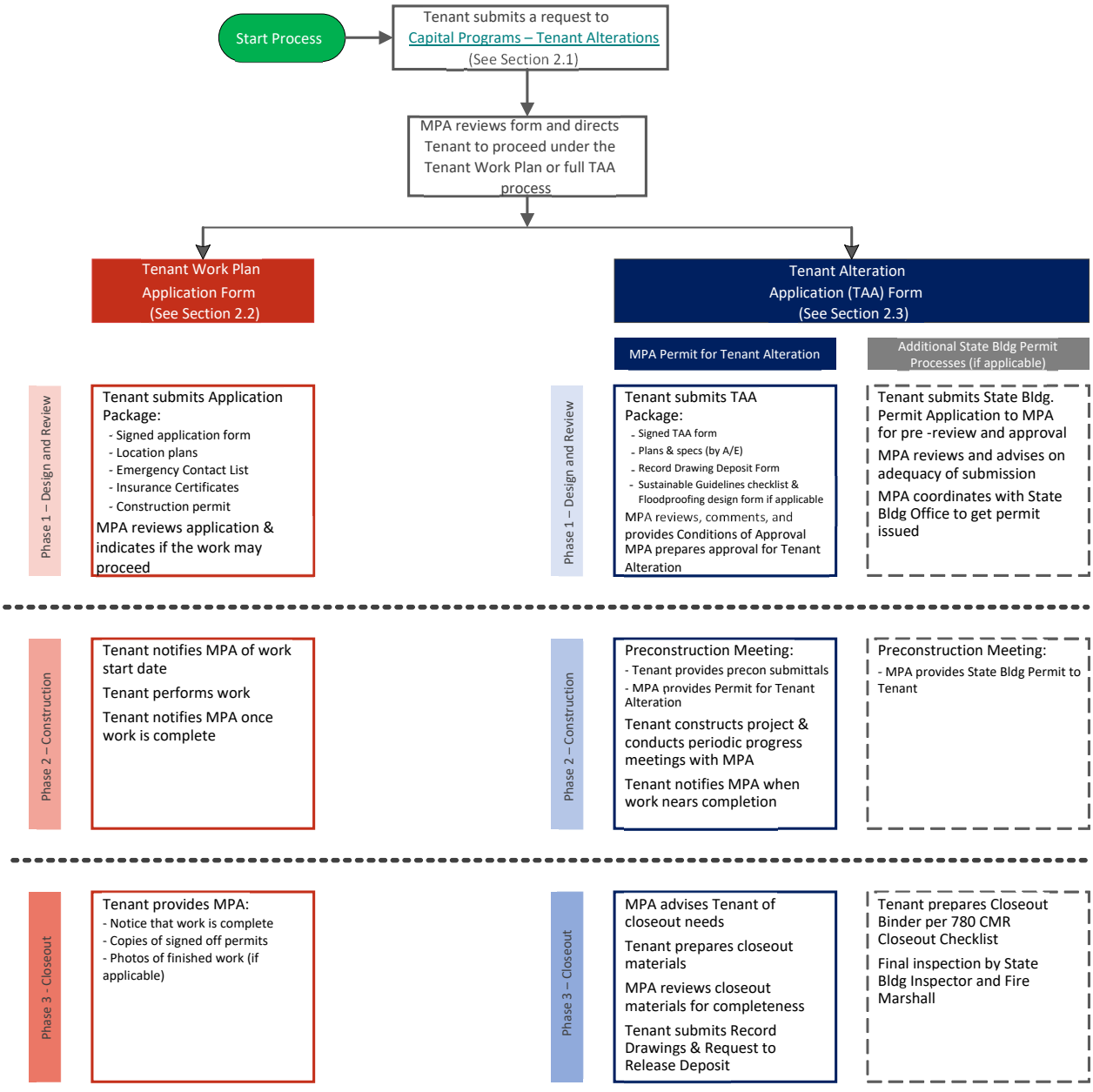
   The Massport Capital Programs Department will provide, upon request, a partial list of architectural, design and engineering consultants that have previously participated in tenant projects at Massport-owned properties. The Tenant, at its option, may contact these or any other qualified consultants and retain their services. No endorsement by Massport of any consultant on this list is intended or should be inferred. The selected architect or engineer will contact Massport Capital Programs for all submittal requirements and design standards for construction documents and models.

2. Certain projects may require the Tenant to connect to base building or site systems and utilities (mechanical, electrical, fire protection, etc.) at a location beyond the Tenant's leased area. Such actions require approval through Massport's Work Plan process. As described in Part 3 "Design and Construction Requirements", Section 7.6, the Tenant's contractor shall prepare and submit a Work Plan, using the appropriate Massport template, to ensure minimal disruption or interference to other ongoing operations or facilities.

3. For certain Massport facilities, base building drawings are available upon request by the Tenant's design team. Drawings and specifications may not reflect complete existing or as-built conditions. Massport will make reasonable efforts to inform the Tenant of existing conditions; however, it shall remain the Tenant's responsibility to perform site surveys and inspections as necessary to verify field conditions.

4. Tenant Alterations to be constructed on certain Massport properties may be subject to design and development guidelines for that area. Massport will advise the Tenant of the need to consult such requirements during the project development phase.

Exhibit 1-1: Overview of the Tenant Alteration Process for Massport-Owned Properties



2. TENANT ALTERATION PROCESS FOR MASSPORT-OWNED PROPERTIES

2.1 Project Initiation

A. To initiate the alteration process, the Tenant shall prepare and submit a request to the Massport Capital Programs – Tenant Alterations. Required information includes:

- Tenant contact information
- Location of the work
- Desired timeline
- Scope of alterations

Information shall be submitted electronically to TAA@massport.com .

B. Based on the information provided on the form and follow-up discussions with the Tenant as needed, Massport will direct the Tenant to proceed with either a Tenant Work Plan or a full Tenant Alteration Application (TAA).

For planning purposes, the Tenant may consult Exhibit 2-1 for an indication of the type of work typically performed under each process. Massport will make the final determination as to which process applies.

C. Tenants are encouraged to reach out to Massport Capital Programs - Tenant Alterations if they would like to discuss any aspect of their project and receive direction or clarification on matters such as:

- Process steps
- Submittal requirements
- Potential permitting requirements
- Extent of as-built and other sources of existing conditions information
- Typical review timeframes
- Point of contact/resources

For certain complex projects, including those to be submitted in phases, a pre-design conference may be required. Massport will notify the Tenant of such need as early as possible in the project development process.

Exhibit 2-1: Which Application Process Applies?

Tenant Work Plan Process: applies to work or repairs and wear-and-tear replacements that have minimal impact on operations and adjacent spaces such as:

- ❑ Repairs and equipment replacement / installations
- ❑ Localized electrical work (receptacles with short runs of conduit)
- ❑ Localized low voltage work not requiring significant infrastructure
- ❑ Furniture installation and related finishes in areas exposed to public view
- ❑ Concession store closures / move-outs

**All applicable trade permits must be submitted with the work plan*

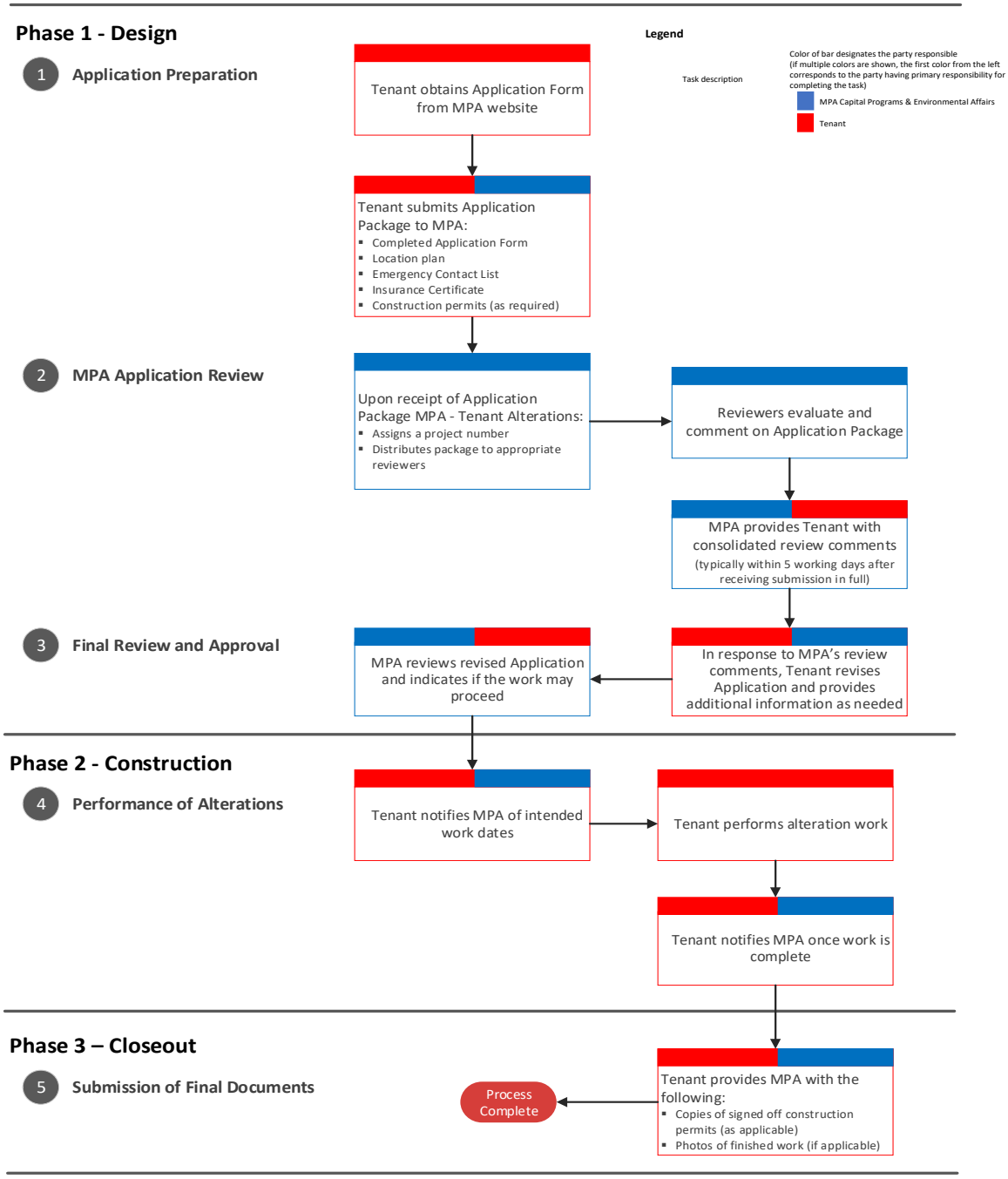
Tenant Alteration Application Process: applies to new construction, alterations, and improvements, including but not limited to:

- ❑ Alterations which by lease obligation require Massport's written approval
- ❑ Any demolition or modification of existing structures, utilities, or equipment on Massport's property
- ❑ Any new free-standing structure or structural building addition including trailers, modular buildings and temporary structures of any kind
- ❑ New construction of any type, interior or exterior
- ❑ Additions or modifications to the following building systems:
  - electrical
  - communications
  - plumbing
  - HVAC
  - fueling systems
  - baggage handling
  - public address
  - fire detection/suppression
  - fire alarm
  - access control systems
  - camera surveillance
- ❑ Rehabilitation/refinishing of an area exposed to public view in a material or finish different from existing
- ❑ All site work, excavation, fencing and landscaping projects
- ❑ Installation of underground or above-ground storage tanks, associated piping and equipment
- ❑ Installation of all satellite dishes, outdoor antennas, electronic systems, equipment or cabling
- ❑ All airfield and apron work including replacement or rehabilitation of aircraft loading bridges, hydrant fueling system installation, repair or replacement, grounding rods, or related work
- ❑ Changes to aircraft parking layouts
- ❑ Investigative site work (subsurface drilling, monitoring wells, etc.)
- ❑ Signage and rebranding programs; interior or exterior graphics

2.2 Tenant Work Plan Process

The Tenant shall follow the process described in this section if Massport confirms that the proposed alterations fall under the Tenant Work Plan Process. Alterations executed under this process generally proceed as depicted in Exhibit 2-2 below.

Exhibit 2-2: Tenant Work Plan Process



2.2.1 Design Phase

Step 1 – Application Preparation

A. Using the current Tenant Work Plan Form (found in Appendix A or on the Massport website), the Tenant shall describe the intended alterations to its leased space. The completed form is to be submitted to the Massport Tenant Alterations electronically.

B. Depending upon the scope of work, in addition to the completed Application Form, the following supporting information shall also be submitted:

- Plans showing the location of the work (in a format larger than 11" x 17", but no larger than 24" x 36")
- All native files used to create the construction documents: All REVIT, BIMxP, all AutoCAD, PDF of drawings, etc.
- Emergency Contact List
- Insurance Certificate for the General Contractor, naming both the sponsoring Tenant and Massport as additional insured parties
- Construction permits as required given the nature of the work (e.g., electrical, plumbing, sprinkler, etc.)

Step 2 – Massport Tenant Work Plan Review

A. Upon receipt of a complete Work Plan Package, Massport Tenant Alterations will assign a project number and distribute the package to Massport staff for review.

Tenant Work Plan packages may be distributed to the following departments:

- Fire Department
- Facilities Maintenance
- Utilities Management
- Airport Business Office (Leasing/Properties)
- Airport Operations
- Capital Programs
- Legal Department
- Real Estate & Asset Management
- Environmental Management
- Risk Management
- Information Technology
- Transportation Services

Tenant shall allow for a Massport review period of **5 working days** from the time of submission in full.

B. Once reviewers have completed their evaluation, the Manager of Tenant Alterations will provide the Tenant with consolidated review comments, if any.

Step 3 – Final Review and Approval

A. In response to Massport's review comments, the Tenant shall revise the Tenant Work Plan and provide additional information as necessary. This will include all native files used to create the construction documents: Revit, AutoCAD, Navisworks, BIMxP, individual PDF files, etc.

B. Once satisfied with the Tenant's submission, Manager of Tenant Alterations will notify the Tenant that the alterations may proceed.

2.2.2 Construction Phase

Step 4 – Performance of Alterations

A. The Tenant shall notify Massport Tenant Alterations of the intended work dates.

B. After performing the approved alterations, the Tenant shall notify the Manager of Tenant Alterations that the work is complete.

2.2.3 Closeout Phase

Step 5 – Submission of Closeout Documents

A. As part of closeout, the Tenant shall submit the following to the Manager of Tenant Alterations:

- Signed off construction permits (as applicable)
- Record models, record CAD and record PDF files reflecting the As-builts prepared by the Tenant's design and construction teams
- Photos (if available)

B. The Manager of Tenant Alterations must receive closeout documentation for Massport to consider the project to be complete.

2.3 Tenant Alteration Application (TAA) Process

The Tenant shall follow the process described in this section if Massport confirms that the proposed alterations shall proceed under the full TAA process. Alterations executed under this process generally proceed as depicted in Exhibit 2-3 below.

Exhibit 2-3: TAA Process

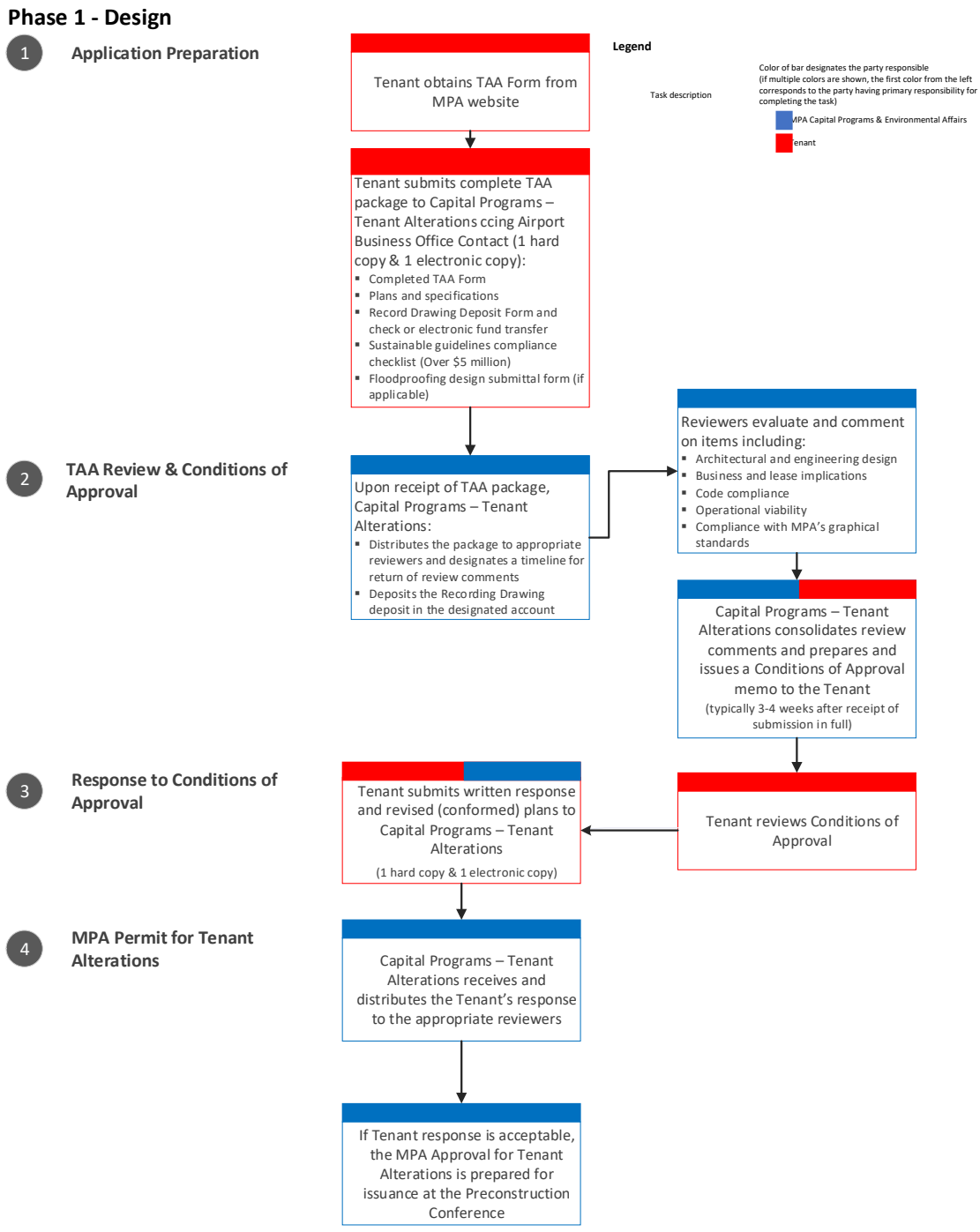
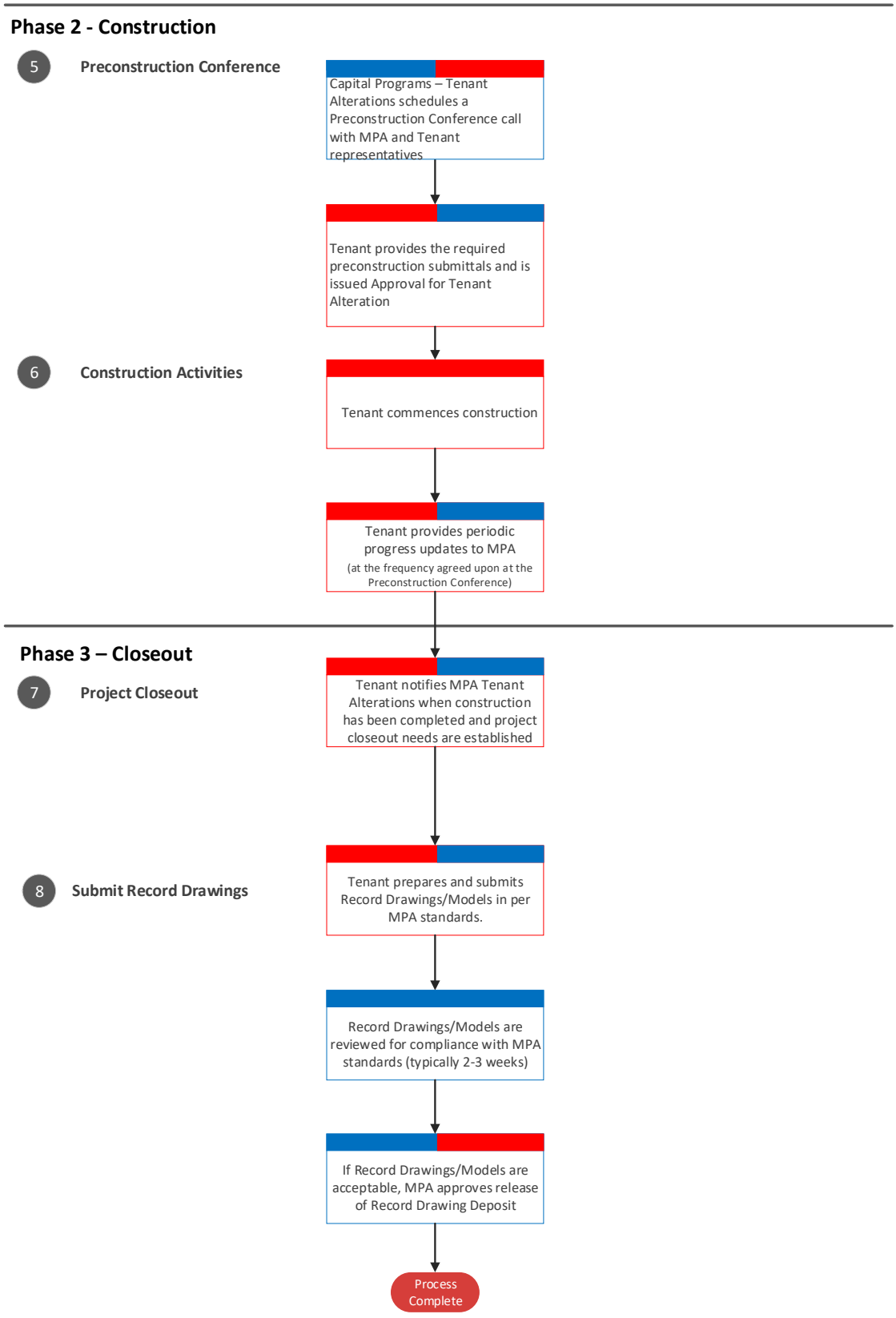


Exhibit 2-3: TAA Process (cont.)



2.3.1 Design Phase

Step 1 – TAA Preparation and Submission

A. The Tenant shall obtain, and carefully review, Massport's Tenant Alteration Application form. Massport requires the submission of one executed original and two copies of the completed TAA form.

B. The Tenant shall engage a qualified architect or engineer, licensed in the Commonwealth of Massachusetts, to prepare plans and specifications that meet the design and construction requirements set forth in Part 3 "Design and Construction Requirements" of this guide. The architect or engineer shall determine if:

- BIM/VDC use is required (refer to Appendix B: TAA BIM/VDC Guide or available for download on Massport's website))
- Sustainability Guidelines Compliance Checklist for projects which meet the cost threshold (over $5 million dollars) & Floodproofing Design Submittal Form if applicable.
- A State Building Permit is needed in addition to the Massport Approval for Tenant Alteration (formerly Massport Permit for Tenant Alteration) (refer to 2.4 State Building Permit for more details)

C. Plans shall be prepared in accordance with the most recent edition of the Massachusetts State Building Code, 780 CMR, and shall bear the seals and signature required per that regulation. Drawings and specifications shall completely identify the Tenant Alterations being proposed, and shall include, without exception, the following information:

- A site/location plan with respect to existing conditions (include column numbers, coordinates, dimensions to existing structures, or other contextual information);
- Descriptive plans of both demolition and construction work, which may include demolition plans, floor plans, roof plans, exterior/interior elevations, sections, door/hardware/finish schedules, and trade drawings, including structural drawings or analyses, electrical riser diagrams, plumbing and mechanical drawings, and sprinkler and fire alarm drawings; and
- Complete specifications of all materials.

D. If the proposed design requires a waiver or variance from other agencies or authorities having jurisdiction, the Tenant shall obtain Massport's consent to the waiver/variance request prior to submitting such requests to the applicable agency or authority, and shall keep Massport apprised of any communications or meetings scheduled on the topic with such agency or authority.

E. Applications for projects with a total estimated cost exceeding $20,000 shall be accompanied by a monetary deposit (the "Record Drawing Deposit") to ensure submittal of record documentation and satisfactory completion of other project requirements at closeout.

Table 2-1: Required Record Drawing Deposits

Estimated Project Construction Cost	Record Drawing Deposit
$20,000 or less	No deposit required
$20,000 - $49,999	$2,500
$50,000 - $99,999	$5,000
$100,000 - $249,999	$10,000
$250,000 - $499,999	$15,000
$500,000 - $999,999	$20,000
$1,000,000 and over	$20,000 for first million + $10,000 per subsequent million up to $50,000 MAXIMUM

Upon written request by the Tenant, Massport may consider waiver of the Record Drawing Deposit requirement if Massport determines, in its reasonable discretion that the proposed Tenant Alteration is transient in nature and Record Drawings are not required.

Checks, made payable to "Massachusetts Port Authority", or payment through electronic QuikPay, shall be submitted with a completed Deposit Form. Massport will return deposits to the applicant upon successful closeout of the project as detailed in the Closeout Phase.

The Record Drawing Deposit Form may be accessed in Appendix A or on the Massport website: http://www.massport.com/media/1996/deposit-form-final-march-2016.docx

F. Once all information is complete, the Tenant shall submit the following to the Manager of Tenant Alterations:

- One paper set of the complete TAA drawings package in a size no smaller than 11"x 17" and no larger than 24" x 36"
- Electronic copy of the signed TAA form
- Electronic models, CAD and drawing files in standard format as detailed in Table 2.2 of this Guide
- Electronic copies of any associated materials (project manual, manufacturer's data, renderings, etc.)

Step 2 – TAA Review and Conditions of Approval

A. Upon receipt of the TAA package, the Manager of Tenant Alterations will:

- Assign a project number;

- Distribute the package to the appropriate reviewers and designate a timeline for the return of review comments; and
- Deposit the Record Drawing Deposit check into a designated account.

B. Reviewers may include the following departments:

- Fire Department
- Facilities Maintenance
- Utilities Management
- Airport Business Office (Leasing/Properties/Concessions)
- Airport Operations
- Capital Programs & Maritime
- Legal Department
- Real Estate & Asset Management
- Environmental Management
- Risk Management
- Information Technology
- Transportation Services

C. The scope of the review may extend to items such as:

- Physical design (e.g., overall design compatibility with base building features, interface with public areas, building systems integration)
- Business and lease implications
- Code compliance
- Operational viability
- Sustainability & Resiliency initiatives
- Compliance with MPA's graphical standards
- Compliance with MPA's BIM & VDC standards and formatting

D. Once reviewers have completed their evaluation of the TAA package, they will recommend approval or disapproval with specific conditions. Such review comments are compiled by the Manager of Tenant Alterations and consolidated into a Conditions of Approval memo issued to the Tenant for its response and agreement.

E. The TAA review process ordinarily requires **three to four weeks** from the time the complete TAA package is received by the Manager of Tenant Alterations, dependent upon the following:

- Size and complexity of the project
- Extent of a project's impact to adjacent buildings and neighboring sites
- Quality, clarity, and completeness of the submitted documents

Tenants shall allow for this review time when ordering materials and scheduling the construction program.

Submission of incomplete or inadequate TAA documentation will delay the review turnaround time for the project.

F. Massport, in its sole discretion, reserves the right, in accordance with its TAA review process, to require the Tenant, its contractor, or subcontractors to demonstrate, to Massport's satisfaction, that the contractor or subcontractor(s) proposed for the work possess the experience, qualifications, skill, ability, competent workmanship, integrity, and financial soundness to satisfactorily perform the work.

The Tenant, its contractor, or subcontractor(s) shall, upon Massport's request, submit such information or documentation necessary for Massport to perform its review or evaluation.

On all questions of acceptance or rejection of a contractor or subcontractor under this provision, Massport's decision shall be considered final.

Step 3 – Tenant's Response to Conditions of Approval

A. The Tenant shall review Massport's Conditions of Approval. If the Tenant cannot comply with one or more of Massport's Conditions of Approval, or if clarification is needed, the Tenant shall so advise Massport in writing.

B. Within **90 days** of Massport's issuance of the Conditions of Approval memo, the Tenant shall submit to the Manager of Tenant Alterations a written response indicating agreement with each of the conditions of approval, accompanied by revised (conformed) plans or drawings.

All review comments or conditions generated by Massport's TAA process shall be reflected in revisions to the Tenant's construction documents (if prior to bidding), or in addenda to the documents.

If there is no resubmission or response from the Tenant within this period, the TAA will be deemed to have been withdrawn by the tenant. The project file will be officially closed, the Record Drawing Deposit will be returned to the Tenant, and the Tenant will be required to submit a new TAA if it wishes to pursue the project

Step 4 – Massport Approval for Tenant Alteration

A. The Manager of Tenant Alterations receives and distributes the Tenant's response to the Conditions of Approval to the appropriate reviewers.

B. If the Tenant's response is acceptable, the Manager of Tenant Alterations will prepare an Approval for Tenant Alteration card (formerly the Massport Permit for Tenant Alteration), which will be issued to the Tenant at the preconstruction conference (see Step 5).

C. There is no fee for the Approval for Tenant Alteration.

D. Construction on the project must commence within **six months** of issuance of the Approval for Tenant Alteration; if construction does not commence within this period, the Approval expires, and a request for a new Approval must be submitted and a new Approval issued.

2.3.2 Construction Phase

Step 5 – Preconstruction Conference

A. The Manager of Tenant Alterations will schedule a preconstruction conference. The Tenant's representative, general contractor, and design consultants are required to attend the meeting, whether held in person or virtually.

B. Massport will issue the Massport Approval for Tenant Alteration at the preconstruction conference. This document will be valid from the date of issuance.

C. If applicable, the Manager of Tenant Alterations or the Building Code Compliance (BCC) Manager will also provide the Tenant with the State Building Permit at the preconstruction conference.

D. At the preconstruction conference, the Tenant shall provide the following submittals:

- Construction trade permits
- Contractor Insurance Certificates (see Part 2 "General Requirements", Section 4)
- Emergency Contact List, in Massport's standard format
- Project schedule

E. Most projects require a periodic (usually weekly) progress meeting scheduled for the duration of the project. This meeting schedule will be arranged with all participants at the preconstruction conference.

Step 6 – Construction Activities

A. If not available at the time of the preconstruction conference, the Tenant shall provide copies of all construction permits to Massport upon receipt. Application for trade permits is the responsibility of the Tenant and its trade contractors

B. The Tenant proceeds with construction, conducting periodic progress meetings with Massport at the frequency agreed upon at the preconstruction conference.

C. The State Building Inspector may request monthly progress reports be submitted by the Tenant's designer for any Tenant Alterations working under a State Building Permit. As construction progresses, the Tenant's contractor shall notify Capital Programs of all requests for scheduling

rough and other interim inspections by the State Building Inspector. Trade inspections are to be scheduled directly with the specific authorities having jurisdiction.

2.3.3 Closeout Phase

Step 7 – Closeout Documentation

A. The Tenant shall consult with Massport Tenant Alterations to determine a project's closeout requirements. Closeout documentation must be received by Capital Programs for Massport to consider the project to be complete.

B. As part of closeout, the Tenant shall submit the following to the Manager of Tenant Alterations:

- Signed off construction trade permits
- Photos (if available)

C. Materials will be reviewed by the Manager of Tenant Alterations for completeness, and the Tenant will be notified of their acceptance. At that time, Massport will consider the project closed.

Step 8 – Record Drawings/Models

A. The Tenant with its design team shall prepare and submit to Massport Record Drawings/ Models of the completed project within 90 days of substantial completion in accordance with TAA requirements. Within this timeframe, the Tenant shall also submit operations and maintenance manuals, if applicable.

B. The Record Drawings/Models and associated technical files shall document what alterations were constructed, and where they are located, both horizontally and vertically. The Tenant with its design team shall incorporate in the Record Drawings/Models all the changes that were made during construction so as to inform future work of existing and as-built conditions.

C. The Tenant shall provide a link for digital transmission of files.

1. The submission shall include everything associated with creating construction documents, including design files at 100% Design and As-Built Record submissions at the time of construction completion / project closeout. These are required to be in the form of BIM, CAD (Site Civil) and individual PDF sheet files.

2. The link for digital transmittal of files shall include, but not be limited to, the following:

    - All Revit, CAD, Civil 3D, individual and combined PDF Construction Documents
    - Navisworks,
    - BIMxP,
    - Point Clouds (if applicable),
    - Completed Excel file of title block information,
    - Written transmittal of files contained in the current submittal, and
    - Any other files pertinent to the creation of the construction documents.

The record drawings/models shall be in the format required by Massport, and be stamped and signed by the designer of record attesting to their accuracy.

3. Massport has specific Site Civil CAD and Room Numbering requirements for all Tenant projects. Site Civil CAD Standards and Room Numbering Standards can be found on the Massport website at this link. (https://www.massport.com/massport/business/capital-improvements/important-documents/). Please coordinate with Massport Design Technologies Integration Group (DTIG) for file templates and additional information at DTIG@massport.com

4. Table 2-2 identifies what is required on all vertical or horizontal project submissions. They fall into 3 categories, (BIM, CAD/Civil 3D, and PDF Construction Documents), each with its own requirements.

Table 2-2: Digital File Submission Requirements

BIM

Consultants shall be required to include the following:

- Acknowledgement of the provided BIMxP and that the project followed the pre-determined LOD requirements.
- Revit: .rvt
  - ❑ Arch
  - ❑ Struc
  - ❑ MEP
  - ❑ FP
  - ❑ All other disciplines (as applicable)
- Navisworks:.nwd, .nwc, .nwf (if applicable)
  - ❑ Federated model: .nwd
  - ❑ Clash Reports, pdf – printable and legible
  - ❑ Associated files: .nwc / .nwf
- Point Clouds: (Native files & Autodesk compatible) (if applicable)
  - ❑ Pre-Con existing conditions
  - ❑ Post construction As-builts
  - ❑ Registered point cloud in non-vendor specific format (ascii text or las) with XYZI (plus RGB if applicable).
  - ❑ Register point cloud in Autodesk RCS/RCP format

CAD/Civil 3D

- CAD/Civil 3D: .dwg
  - ❑ Any related CAD
  - ❑ Any Civil 3D
  - ❑ Site Civil data geo referenced to MPA state plane cords

- All supporting linked files:
  - ❑ CAD
  - ❑ PDF
  - ❑ Revit
  - ❑ Sketchup
  - ❑ Jpegs
  - ❑ Other…
- All supporting trade files:
  - ❑ CAD
  - ❑ PDF
  - ❑ Revit
  - ❑ Sketchup
  - ❑ Jpegs
  - ❑ Other…

SITE CIVIL: Consultants shall refer to the latest MPA Site Civil CAD Standard guide for all civil, site and underground utility requirements. For all site / civil design & construction at Massport, MPA DTIG requires the following file types submitted, which must comply with all MPA standards:

- AutoCAD & Civil 3D file Standards:
  - ❑ MPA CAD files shall be individual files per drawing sheet; named (MPA Project No.-Sheet No.dwg)
  - ❑ Follow MPA standards for all layer naming
  - ❑ AutoCAD file units must be set to: Decimal, Insertion set to "Unitless", angle precision set to "0.0000"
  - ❑ UCS set to "World"
  - ❑ All objects must be in MA State Plane Coordinates
  - ❑ Horizontal Coordinates: NAD83, EPSG Code is 2249
  - ❑ Vertical Coordinates: NAD88, EPSG Code is 6360
- AutoCAD eTransmit: (always utilize to submit CAD to MPA)
  - ❑ eTransmit to package all CAD & linked files
  - ❑ Include all xrefs and associated files used to create CAD files
  - ❑ In "settings" – be sure to package everything into one (1) parent folder with no sub folders
- Point Clouds: (Native files & Autodesk compatible) (if applicable)
  - ❑ Pre-Con existing conditions
  - ❑ Post construction As-builts (prior to back-filling or slab pouring)
  - ❑ Registered point cloud in non-vendor specific format (ascii text or las) with XYZI (plus RGB if applicable).
  - ❑ Register point cloud in Autodesk RCS/RCP format

PDF Construction Documents

All projects, regardless of design methods (BIM vs CAD) require both design and record/as-built PDF construction documents to be submitted in the format listed below:

- Design / Bid
  - ❑ One pdf file of conformed sheets in a BID set: TAA####-Entire Design Set.pdf
  - ❑ Individual pdf sheet files of said set; named correctly: TAA####-A101.pdf
- As-Built / Record

- ❑ One pdf file of conformed sheets in a RECORD set: TAA####-Entire Record Set.pdf
- ❑ Individual pdf sheet files of said set; named correctly: TAA####-A101.pdf

The Primary party will also be issued an excel file in which they are required to populate the title block information from each PDF file.

2.4 State Building Permit Application (if applicable)

2.4.1 Application Phase

A. Most construction projects at Massport properties require a state building permit, which is issued by the Commonwealth of Massachusetts Division of Occupational Licensure Office of Public Safety and Inspections. **Massport facilitates the process of state building permit application and permit issuance for the tenant; however, requirements for the state building permit process and that Massport TAA process are different, and the submissions for each must be kept separate**.

B. Once a TAA number is assigned the Tenant can apply for State Building Permit. Application and instructions can be obtained from the Building Code Compliance (BCC) Manager at Massport Capital Programs. The Tenant shall follow the steps below to obtain the State Building Permit

- Step One:
  - Applicant will fill out permit application and provide all required back up documents with the exception of the signed/stamped drawings. Applicant will email documents to the BCC Manager for a pre-review to ensure application has been filled out correctly and completely.
  - Once the submission is deemed complete the following will be submitted to the attention of the BCC manager:
    - 1 paper copy of the permit application
    - 1 paper copy of each required additional document listed on the checklist
    - 1 paper copy of a full size sighed/stamped set of drawings
    - 2 thumb drive that includes all of the above noted documents
  - The BCC Manager will have 7 days to review the package
- Step Two:

- Once submission package is deemed complete, the Assistant Director of Capital Programs Construction Unit will sign off on the package and it will be hand delivered to the State Building Inspector for his review.

- The State Building Inspector has 30 days from date of receipt to issue the permit. More review time may be required if the project is large.

- Once the Inspector's review has been completed, he will direct Massport to issue an approval letter to the applicant.

  This approval letter will be received by the applicant via email and will include instructions on how to set up an IPS account and apply/pay for the permit via the Division of Occupational Licensure's online IPS system.

- Step Three:

  - The applicant will need to set up an online account with the Division of Occupational Licensure's Inspections and Permitting System (IPS) if they do not have one. Once the online account has been set up the applicant will apply/pay for the building permit.

  - The applicant will receive via email a receipt from IPS that contains a pending building permit number.

  - This receipt will be forwarded to the BCC Manager at Massport Capital Programs.

  - This receipt will be hand delivered to the Building Inspector

  - The Building Inspector will then release the permit to the BCC Manager who will in turn deliver to the applicant.

Note: The building permit application required documents can be obtained by contacting Massport Capital Programs Building Code & Compliance Manager.

C. Construction under this permit must commence within **six months** from the date of issuance.

2.4.2 Project Close -Out – Binder, Final Inspections, and Final Submission

When a project is ready to start the project close out process for the Commonwealth of Massachusetts – Division of Occupational Licensure, Office of Public Safety and Inspections, there are several items that must be completed prior to submission of the project close out binder – Final inspections for Electrical, Plumbing and Sheet Metal. Once these final inspections have taken place, the building permit has been signed off by each of the inspectors and all final construction control affidavits are received from the Engineer of Record, the final project closeout binder review process can begin. Steps outlined below:

- Tenant Contractor follow instructions on the project close out binder checklist, which is provided by Massport Capital Programs. This checklist includes the "tabs" and "titles" for each section of the binder.

- When the three ring project close out binder has been completed (with the exception of the final MPA Fire inspection and the final Building inspection) the binder will be submitted to Massport Capital Programs for review. The Contractor/Permit Holder is to keep an electronic copy of the binder contents for their own files.

- When the review of the binder has been completed and the binder has been approved, the MPA Fire final inspections will be scheduled through the BCCC Manager at Massport Capital Programs.

- MPA Fire will complete their final inspections and sign the Building Permit in the final block noted on the permit card. This allows the State Building Inspector to schedule his final inspection for the project.

- The State Building Inspector will perform his final inspection and if the inspection passes, the State Building Inspector will provide the final signature required on the permit card.

- The contractor/permit holder will then send a copy of the signed permit card via email to the BCCC Manager at Massport Capital Programs. The copy of the permit will be inserted into the project close out binder.

- The project then submits four thumb drives to Massport Capital Programs. They will be distributed to the State Building Inspector, MPA Project Manager or MPA Real Estate Asset Manager, and MPA Building Code and Compliance Manager. They must include the following:

    1. The signed off building permit card

    2. All project closeout binder contents

    3. As-built drawings

- At this time the State Building Inspector will issue either a Certificate of Occupancy or a Certificate of Completion for the project. The certificate will be sent to the permit applicant and all other stakeholders. The project and permit is now officially closed.

(End of Section)

PART 2- GENERAL REQUIREMENTS

3. TERMS AND CONDITIONS

The terms and conditions below apply to all Tenant Alterations on Massport properties. Please read them carefully. The Applicant's signature on the TAA constitutes agreement to comply with and be bound by all conditions of project approval stated in this Guide, on the TAA, and/or otherwise required through the TAA process. Applicant acknowledges that in addition to the TAA, there is a right of entry, license agreement or lease agreement by and between the Authority and Applicant providing Applicant with entry upon the work area. It is intended that the terms and conditions of the TAA supplement the terms and conditions relating to Tenant Alterations and other tenant obligations under the right of entry, license agreement or lease agreement between the Applicant and the Authority. In the event of conflict between the TAA and the right of entry, license agreement or lease agreement, the terms of the right of entry, license agreement or lease agreement shall control.

3.1 General Terms and Conditions

A. The Applicant shall obtain prior to, and keep in full force and effect during construction, any and all permits, licenses and approvals relating to the Tenant Alterations that is the subject of this TAA as required pursuant to applicable federal, state and local laws, statutes, ordinances, rules, regulations, directives and orders.

B. The Applicant shall perform all construction under this TAA in accordance with all federal, state, and municipal laws, statutes, orders, ordinances, rules, regulations, and directives, including the Massachusetts Environmental Policy Act ("MEPA"), as may be applicable to the Tenant Alterations or the performance thereof.

C. Approval by the Authority of the Tenant Alterations shall not create any liability on the part of the Authority for the design sufficiency of such work or its compliance with any applicable laws, statutes, ordinances, rules, regulations, directives or orders, nor does it relieve the Applicant of its responsibility for assuring compliance.

D. Approval by the Authority of the Tenant Alterations shall not waive any rights of the Authority under M.G.L. Ch. 21E, §1 *et seq.*, or any other local, state or federal law, statute, ordinance, rule, regulation, directive or order to compel Applicant to assess, contain, remove, remediate, clean-up or take any other response action in connection with any oil or hazardous waste or material that:

   1. Has been released or threatens to be released on or from the premises on which the Tenant Alterations subject to this TAA is performed, or

   2. Is released or threatened to be released in connection with the Tenant Alterations subject to this TAA or to seek payment for or reimbursement of any damages, costs and liabilities of the Authority or any third party for such assessment, containment, removal, remediation, clean-up or response action.

E. The Applicant shall comply with and direct its officers, employees, agents, consultants, vendors, and contractors to comply with the rules, regulations, and directives of the Authority now in effect which are applicable to the performance of the Tenant Alterations, and such further applicable rules, regulations and directives which may from time to time during said performance be promulgated by the Authority for reasons of safety, security, health, preservation of property or

maintenance of a good and orderly appearance of the facility, or for the safe and efficient operation of the facility.

F. Based on information submitted by Applicant in the TAA, the Authority will consider whether the proposed project has the potential to result in the discovery or generation of asbestos containing materials, oil-contaminated media, or other hazardous materials, or to impact any known areas of contamination. Prior to commencement of project construction, Applicant may be required to conduct pre-characterization studies of structures, soil, groundwater, and/or other relevant media as the Authority, in its reasonable judgment, deems necessary to determine the scope and nature of the potential for discovery or generation of asbestos-containing materials, oil-contaminated media, or other hazardous materials. Any such hazardous materials discovered or generated during the course of the Tenant Alterations approved by this TAA must be reported immediately to the Authority and must be handled and disposed of in accordance with the terms and conditions of the right of entry or lease agreement.

G. To the fullest extent permitted by law, Applicant at its sole cost and expense, shall defend, indemnify, and hold harmless the Authority and its members, officers, employees, and agents from and against any and all liabilities, claims, demands, causes of action, losses, damages, actions, including actions for personal or bodily injury or wrongful death, actions for property damage, and any other types of claims asserted by third persons alleging a violation of law or for any other cause, costs, fines, fees and expenses of any kind or nature whatsoever, including attorneys' fees and costs of investigation and litigation, arising from or related to the acts, omissions, operations, or negligence of Applicant, and a tenant's contractors, subcontractors, suppliers, agents, or employees; provided, however, that this obligation to defend, indemnify and hold harmless shall not apply to claims which Applicant demonstrates were caused solely by the negligence or willful misconduct of the Authority. The foregoing express obligation of indemnification shall not be construed to negate or abridge any other obligation of indemnification running to the Authority which would exist at common law, and the extent of this obligation of indemnification shall not be limited by any provision of insurance undertaken by Applicant. In case any action or proceeding is brought against the Authority by reason of any such claim, Applicant upon notice from the Authority, shall resist and defend such action or proceeding with counsel reasonably acceptable to the Authority. The Authority shall give Applicant reasonable written notice of any claims threatened or made or suit instituted against it which could result in a claim of indemnification hereunder.

H. All Tenant Alterations shall be performed in a professional manner, using only first-class materials. Quality control is the responsibility of the Applicant. Tenant Alterations shall be done in accordance with the drawings and specifications described in Part 1 of the application and approved by the Authority, to the satisfaction of and subject to the inspection of the Authority's representatives. The Applicant shall re-do or replace at its expense, any Tenant Alterations not approved by the Authority's representatives.

I. Prior to the commencement of the Tenant Alterations and throughout the performance thereof, the Applicant shall erect and maintain at its own expense in or about the space such barriers, shields, and other suitable protective devices for the protection of the public and others and their property or, as may be necessary or desirable for the purpose. The Tenant Alterations shall be performed in such manner as will cause the minimum inconvenience to members of the public and others at the facility. During the performance of the Tenant Alterations, the Applicant shall not permit the accumulation in or about the space of any debris, rubbish, or litter, of any sort, resulting from the work, and shall make such arrangements for the frequent and controlled

removal thereof from the facility, by means to be furnished by the Applicant, or as may be necessary to prevent such accumulation.

J. In the performance of the Tenant Alterations, the Applicant will employ, directly or indirectly, only labor which can work in harmony with that being employed by Massport at its facilities, and that being employed by other tenants if Applicant is working side by side with such other tenants. Applicant will not employ or permit the use of labor or otherwise take any action, which might result in a labor dispute involving personnel performing work or providing services at Massport's facilities by or on behalf of Applicant. Furthermore, in the event of any such interference or conflict, Applicant, upon demand of Massport, shall cause such contractors, mechanics or laborers causing such interference or conflict to leave the premises immediately. In the event that Massport determines that it is necessary for public safety or the efficient operation of its facilities to post police details or to take other actions as a result of the inability of Applicant's employees, contractors, subcontractors, or other parties performing work on or about the premises to work in harmony with other elements of labor employed at such facilities, Applicant shall reimburse Massport for all reasonable costs incurred by Massport in doing so.

K. The Applicant shall notify the Authority not less than two (2) days prior to the commencement of the Tenant Alterations, and shall complete the Tenant Alterations fully and acceptably within the time period specified in Part 1 of the application. Upon completion of the Tenant Alterations, Applicant shall notify the Authority in writing, and shall provide as-built documentation and Record Drawings, as defined in Section 2.3.3 and Appendix B, as required by the Authority. In the event the Tenant Alterations performed pursuant to this TAA do not require a State Building Permit, then at the completion of such work, the Authority reserves the right to request that the Applicant provide the Authority with a closeout certificate and all associated backup documentation.

L. The Authority's approval of the TAA shall not imply the existence of any lease or leasehold interest of the Applicant in any Massport's properties.

M. The Authority reserves the right to require payment and performance bonds to ensure project completion in accordance with the Project Closeout Requirements.

3.2 Alteration of Terms and Conditions

It is intended that the terms and conditions of this Guide supplement the terms and conditions relating to Tenant Alterations and other tenant obligations under the existing right of entry, license agreement or lease agreement between a tenant and the Authority. In the event of any inconsistency between the terms and conditions of this Guide and the terms and conditions of the right of entry, license agreement or lease agreement, the more restrictive and stringent provision as applied to a tenant shall control and govern.

(End of Section)

4. TENANT CONTRACTOR INSURANCE REQUIREMENTS

4.1 General Requirements

A. The contactor and subcontractor(s) shall not commence Tenant Alterations under their contract until each has obtained all the insurance required by these specifications and/or provisions.

B. The types and minimum amounts of the insurance to be provided for by the contractor and subcontractor(s) shall be as defined hereinafter.

C. Each policy of insurance required herein shall be in a form and by a company reasonably satisfactory to Massport. Each insurer shall be authorized to do business in Massachusetts and shall have a so-called A. M. Best rating of "A-" or better.

D. All certificates of insurance, except for workers' compensation, shall list Massport as an additional insured and be specifically endorsed to recognize the Tenant's obligations pursuant to the right of entry or lease agreement. The certificates of insurance shall be provided to Capital Programs prior to the issuance of the Approval for Tenant Alteration.

E. Insurance certificates shall contain an agreement that such policies of insurance shall not be altered or cancelled by the insurer during its term without giving at least thirty (30) days written notice to Massport.

F. The Tenant shall provide annually updated certificates indicating insurance coverage to Massport, as applicable.

G. Insurance certificates shall reference the project's TAA number, and shall be submitted for every TAA project.

H. Questions on Massport's insurance requirements should be directed to the Massport Risk Management Department.

4.2 Worker's Compensation Insurance

The general contractor and subcontractor(s) shall, before commencing performance of the Tenant Alterations, provide Workers' Compensation insurance as required by law, including Employers Liability insurance with a minimum limit of One Million Dollars ($1,000,000.00), or evidence of satisfactory compliance with the regulations of the Commonwealth of Massachusetts regarding self-insurance, for the payment of compensation and the furnishing of other benefits under Chapter 152 of the General Laws, as amended, to all persons to be employed under the contract, and shall continue such insurance in full force and effect during the term of the Tenant Alterations.

A. Liability Insurance/Commercial General Liability – Tenant shall ensure that the contractor and subcontractor(s) shall obtain and maintain a Commercial General Liability Policy, including products/completed operations coverage, with a combined single limit provision for bodily injury and/or property damage of a minimum of One Million Dollars (**$1,000,000.00)**, and written on an occurrence basis, and including XCU coverage (explosion, collapse, underground), as applicable.

B. Commercial Automobile Liability and Property Damage – The contractor and subcontractor(s) shall obtain and maintain commercial automobile liability insurance for bodily injury and property damage with a minimum combined single limit of not less than **$1,000,000**, written on an occurrence basis, covering all owned vehicles, or non-owned vehicles for all damages arising out of bodily injuries, death or destruction of property.

Contractors and subcontractors that need **airside access** to perform the proposed Tenant Alterations are required to obtain commercial automobile liability insurance for bodily injury and property damage with a combined single limit of not less than **$10,000,000** covering all owned, hired, and non-owned vehicles for all personal and property damages arising out of bodily injuries, death or destruction of property. Such airside access shall be obtained only after completing the requisite Application for Ramp and Aerodrome Vehicle Approval Permit with Aviation Security.

NOTE: Massachusetts Port Authority shall be named as an additional Insured on all policies of liability insurance.

C. Property Insurance – The contractor and subcontractor(s) shall provide property insurance to cover business personal property and property in the contractor and subcontractor(s) care, custody and control at the work site to the full insurable interest thereof and shall with respect to said property insurance designate the Tenant and Massport as additional insureds and loss payee as their interest may appear.

Contractor and subcontractor(s) shall also provide Builders Risk coverage for projects that involve the construction of facilities separate and apart from existing structures.

D. All limits of liability and coverage are subject to review and change based upon the nature and scope of work to be performed. The Authority reserves the right to require higher insurance coverage amounts in its sole discretion.

4.3 Pollution Liability Insurance

When projects involve oil and hazardous materials (e.g., asbestos abatement, tank and/or pipeline removals), contractor and subcontractor shall obtain and maintain appropriate pollution legal liability insurance, as determined by Massport.

(End of Section)

5. CODES, LAWS, AND COMPLIANCE

5.1 Regulatory Construction Permits and Certificate of Occupancy

A. New construction, renovations to existing buildings, and/or spaces within existing buildings, including associated demolition, are subject to the requirements of the State Building Code and require review, approval and issuance of appropriate permits by the Commonwealth of Massachusetts agencies, and others that may apply. All construction documents shall be reviewed and approved by the State Building Inspector and required permits obtained prior to start of any construction.

B. All construction is subject to:

1. Massachusetts General Law (M.G.L.) Chapter 143, Section 54A "Acceptance or Approval of Construction Plans or Specification; Seal of Architect or Professional Engineer"

2. 250 Commonwealth of Massachusetts Regulations (CMR) Board of Registration of Professional Engineers and Land Surveyors

3. 231 CMR Board of Registration of Architects

C. The State Building Inspector will review all construction documents subject to regulatory permits or may direct how construction documents are to be reviewed and approved prior to the issuance of a State Building Permit, which may include the review of plans with design professionals or contractors.

D. All construction is subject to periodic inspections during construction by any authorized inspection authority, and is subject to final inspection prior to the issuance of a certificate of occupancy by the permitting authorities.

E. For projects within the City of Boston, permits and inspections are the responsibility of the following agencies and entities:

Permit	Responsible Agency/Entity
Building Permit	Commonwealth of Massachusetts Department of Public Safety - State Building Inspector
Plumbing and Gas Permit	Board of State Examiners of Plumbing and Gas Fitters, State Plumbing Inspector
Elevator Permit	Department of Public Safety Elevator Board, State Elevator Inspector
Electrical Permit	City of Boston Inspectional Service Department, Electrical Inspector
Cross-connection (Backflow Preventer/Sprinkler Systems) Permit	Boston Water and Sewer Commission

Permit	Responsible Agency/Entity
Restaurant/Food Establishment	City of Boston Inspectional Services, Health Department Inspector, Board of Health (Liquor License through City of Boston)
Fire Protection, Fire Prevention Permits	Massport's Fire Marshal's Office
Storage Tank Permits (Installation and Removal)	State Fire Marshal's Office
Sheet Metal Permit	Commonwealth of Massachusetts
FAA 7460 Crane Determination	Federal Aviation Administration
Trench Permit	Massport Capital Programs
Certificate of Inspection	Commonwealth of Massachusetts Department of Public Safety – State Building Inspector
Assembly Permit	Massport's Fire Marshal's Office
Common Victualler	City of Boston

5.2 Massport's Fire Marshal's Office Permits

Applications for the following activities shall be made in person at the Office of the Fire Marshal:

- Automatic sprinkler standpipe systems
- Fire alarm systems
- Fire suppression systems
- Smoke control systems
- Fire mains and hydrant systems
- Flammable and/or compressed gas storage
- Flammable and/or compressed liquid storage
- Hotwork
- Open flame – miscellaneous cooking equipment

5.3 Laws, Regulations, Standards and Massport's Fire Marshal's Office Fire Protection and Fire Prevention

A. Massport's Fire Marshal's Office reserves the right through the Massachusetts Port Authority's enabling act, legislation, regulations and certification manuals to meet or exceed minimum state regulatory fire protection, fire prevention and construction safety requirements for the protection of all of its properties and the safeguarding of the general public, employees, tenants and emergency response personnel.

B. At a minimum, the following regulatory documents must be complied with for all construction and construction installation activities at all times:

1. M.G.L. Chapter 143, Sections 1 *et seq.*, "Inspection and Regulations of, and Licenses for Buildings, Elevators and Cinematographs"
2. 780 CMR Section 10 *et seq.*, The Massachusetts State Building Code
3. 524 CMR "Board of Elevator Regulations"
4. 521 CMR, "Architectural Access Board"
5. M.G.L. Chapter 148, "Fire Prevention"
6. 527 CMR, "Massachusetts Comprehensive Fire Safety Code"
7. 310 CMR, "Department of Environmental Protection"
8. 105 CMR Section 120, "The Control of Radiation"
9. 248 CMR "Board of State Examiners of Plumbers and Gas Fitters"
10. 237 CMR "Board of State Examiners of Electricians and Board of Electricians Appeals"
11. 528 CMR "Bureau of Pipefitters & Refrigeration Technicians"
12. Americans with Disabilities Act of 1990, 42 USC 1210 *et seq.*, as amended
13. All applicable regulations of the Occupational and Health Administration (OSHA), as amended

C. See below excerpt from 527 CMR 1.00 Massachusetts Comprehensive Fire Safety Code

1.15 Technical Assistance

1.15.1 General

1.15.1.1 As permitted by other sections of this Code, the AHJ shall be permitted to require a review by an approved independent third-party with expertise in the matter, to be reviewed at the submitter's expense.

1.15.1.2 The independent reviewer shall provide an evaluation and, if appropriate, recommend necessary changes of the proposed design, operation, process, or new technology to the AHJ.

1.15.1.3 The AHJ shall be authorized to require design submittals to bear the stamp of a registered design professional.

1.15.1.4 The AHJ shall make the final determination as to whether the provisions of this Code have been met.

The above mentioned code allows the AHJ to request a 3rd party reviewer of the fire protection systems during the design process. Massport Fire may request that a Tenant Alteration must submit all plans to a third party reviewer at the submitter's expense. After the third party review,

the results are to be shared with Massport Fire/Rescue and a final determination will be issued from Massport Fire/Rescue in writing to all parties involved.

5.4 Accessible Facilities

Massport is committed to developing and maintaining accessible facilities for the traveling public, and requires its tenants and vendors to commit to the same. All new construction and alterations undertaken by the Tenant must fully comply with all state and federal accessibility regulations and codes.

5.4.1 Compliance with Americans with Disabilities Act (ADA) Requirements

A. Massport is a public entity subject to Title II of the Americans with Disabilities Act (42 USC 12101, et seq. and regulations at 28 CFR part 35 et seq.). To the extent permitted by law, Massport's obligations under Title II of the ADA shall be assumed by and become obligations of the Tenant.

B. Private entities are covered under Title III of the ADA. Title III prohibits discrimination on the basis of disability by private entities in places of public accommodation (facilities that provide products and services to the public) or commercial facilities (facilities that provide products and services to other businesses.)

C. Applicants are required to comply with all obligations related to construction and alterations under the ADA, including without limitation the most recent edition of the ADA Standards for Accessible Design: http://www.ada.gov/2010ADAstandards_index.htm

D. Employee common use areas (e.g. lounges, toilet and locker rooms, and emergency egress routes) are required to be fully accessible. Employee-only work areas must be designed and constructed so that a person with a disability can approach, enter, and exit. Under Title I of the ADA, any employer with fifteen (15) or more employees is required to make reasonable accommodations for employees with disabilities as defined in the ADA.

E. Readily Achievable Barrier Removal. Some tenants may have architectural and communication barrier removal requirements even though they are not engaged in a tenant alteration. Owners and operators of public accommodations have an obligation to remove architectural barriers and communications barriers within existing facilities. The deadline for compliance was January 26, 1992 and is an on-going obligation. This barrier removal obligation is equivalent to an affirmative action requirement.

5.4.2 Compliance with Massachusetts Architectural Access Board (AAB) Regulations (521 CMR Section 1.0 et seq.)

The Tenant is subject to all provisions of the Massachusetts AAB Regulations, 521 CMR 1.0, *et seq.* http://www.mass.gov/eopss/architectural-access-board.html. The rules and regulations of the AAB are in addition to the ADA requirements. The AAB has stated its intention to bring the state regulations into a substantial equivalency with the ADA standards. Until this is achieved, compliance with AAB's regulations, as well as the ADA standards for all alterations to public areas is required.

(End of Section)

PART 3 – DESIGN AND CONSTRUCTION REQUIREMENTS

6. DESIGN CRITERIA

6.1 General Requirements

A. Tenant projects are generally subject to the requirements indicated herein. Proposed deviations shall be subject to review and approval through the TAA process.

B. The Tenant's design team shall refer to Appendix B: *Massport's Guide to BIM & VDC on TAA Projects* to determine required design deliverables and whether BIM use is necessary. See also the digital file submission requirements in Part 1 "Tenant Alteration & Construction Process", Section 2.3.3.

6.2 Architecture

6.2.1 General

Figure. 1 Logan Airport Terminal B

A. Gypsum wall board shall be minimum 5/8" thick, fire-resistant Type X per ASTM C1396.

B. Metal door frames in new construction shall be welded. Knock-down types are not permitted.

C. All restroom and bathroom facilities shall include hard, non-absorbent materials in wet areas. Walls and partitions around the full perimeter of utility closets and restrooms, or within 2 feet of sinks, urinals and water closets, shall have a hard, smooth, nonabsorbent surface extending from the floor base to a minimum of 38" high to ensure ease of cleaning and to prevent possible damage from water, cleaning processes, and impact loads. Concealed metal supports, hangars or blocking shall be provided for fixtures and accessories. No wood blocking or other substitutions are allowed.

D. All HVAC, electrical, and plumbing conduit and piping cored holes shall be sealed from both the top and bottom of penetrations once the pipe is installed to achieve a waterproof/firestop condition. The top seal shall include a 3-inch collar, either epoxy sealed or welded to the floor with a rubber seal to the pipe that will not allow water to follow the pipe path to the floor below. The bottom opening shall be sealed in the event of a breach of the top seal.

E. Sites located under a metal pan roof deck shall have nothing hung directly from the roof deck, including drop ceilings, light fixtures, conduit, ductwork, and pipe. Items shall instead be supported from Unistrut (or similar), to be run between the roof deck support structure. Anything hung directly from the structure shall be designed and specified by the Tenant's Engineer of Record (EOR) and submitted to Massport for approval.

F. No wood blocking shall be used.

6.2.2 Carpet Material

A. All new carpet material shall reflect acceptable Critical Radiant Flux Test Criteria as specified in the State Building Code.

B. A minimum Critical Radiant Flux Test rating of 0.22 watts centimeter squared or better is acceptable within a building with 100% sprinkler protection throughout.

C. A minimum Critical Radiant Flux Test rating of 0.45 watts per centimeter squared or better is acceptable within a building without sprinkler protection, if approved by Massport's Fire Marshal's Office.

D. Carpet Material Test Reports from an approved testing laboratory shall be submitted to Massport's Fire Marshal's Office for review and approval prior to carpet installation. Specification data sheets from the manufacturer will not be accepted in lieu of an actual material test report.

E. Carpet material shall be installed only by methods defined in applicable test reports and presented to Massport's Fire Marshal's Office for review and approval. If a carpet is tested as direct glue down installation, then it shall be installed in the same manner, without any type of padding and/or underlayment.

F. Massport's Fire Marshal's Office reserves the right and authority to oversee and further regulate the installation of any and all carpet installation within Massport's facilities and tenant areas. New carpet installation in any areas that are not regulated by the State Building Code will be evaluated for use on the basis of either Critical Radiant Flux Test Criteria and/or flame spread, fuel contribution, or smoke development test criteria.

6.2.3 Other Interior Finishes

A. All materials used for interior finish and/or for decorative purposes shall be approved for use prior to installation. Flammability Test Report Data and Manufacturer Specification Data shall be submitted to Massport's Fire Marshal's Office for review and approval prior to material installation.

B. Interior finish material shall be installed on non-combustible surfaces. If new finish material is to be installed on existing surfaces, then all finish materials, including glues and bonding agents shall be removed prior to installation of any new material.

C. Interior finish material shall be installed in accordance with the approvals issued by designated testing agency.

D. Acoustical type ceiling tiles shall have a Class A Flame Spread Rating. Suspended ceilings and their support systems shall be listed by Underwriters Laboratories, Inc. as non-combustible construction. Combustible construction and building components are not permissible above any ceiling areas. Insulation for pipes and duct-work (including duct liners) and their adhesives shall be non-combustible and listed by Underwriters Laboratories, Inc. as non-combustible building materials.

6.2.4 Decorative Material

All decorative materials to be used within Massport buildings shall satisfy all requirements regulated by 527 CMR 12.5, the Massachusetts Comprehensive Fire Safety Code, latest edition. Manufacturer data sheets shall be submitted to Massport's Fire Marshal's Office for approval.

6.2.5 Furniture

A. Upholstered furniture, molded seating, and re-upholstered furniture shall comply with the State of California, Bureau of Home Furnishing and Thermal Insulation Technical Bulletin Number 117 section 2013 (Cal. 117), entitled "Flammable Test Procedures for Seating for Use in Public Occupancies", dated 1991 as amended and as regulated by 527 CMR Section 1.00 et seq., the Massachusetts Comprehensive Fire Safety Code, latest edition.

B. The following label shall be attached to all articles of regulated furniture complying with Cal. 133.

NOTICE: THIS ARTICLE IS MANUFACTURED FOR USE IN PUBLIC OCCUPANCIES AND MEETS THE FLAMMABILITY REQUIREMENTS OF CALIFORNIA BUREAU OF HOME FURNISHING TECHNICAL BULLETIN 133. CARE SHOULD BE EXERCISED NEAR OPEN FLAME OR WITH BURNING CIGARETTES.

Logan Airport Terminal E

6.2.6 Door Locks

Access to Tenant doors may be required by Massport; such necessity will be determined during the review of the proposed Tenant Alterations. Accordingly, when preparing door hardware specifications, the Tenant shall review locking requirements with Massport's Lock Shop as coordinated through the Capital Programs Department.

6.2.7 Roof System Design

A. Design

1. Massport generally specifies a roof system with a minimum 45 mil KEE based membrane conforming to ASTM D6754 (Fibertite KEE membrane) or minimum 60 mil PVC based material conforming to ASTM D4434 (Sarnafil PVC membrane.) Roof performance shall meet the intent of Factory Mutual FM 1-165 for the field with prescriptive enhancements in the perimeters and corners to meet the increase wind uplift,

2. Roof Structure - The improvements should in no way diminish or interfere with the structural integrity of the building, roof structure, or roof drainage.

3. Proper Distances - Improvements or new equipment shall be no less than 24" from parapet walls, existing equipment curbs, or any rooftop projection, to allow for safety clearances, and proper flashing and sealing of the roof membrane.

B. Roof Work Requirements

1. Access to building roofs owned by Massport is restricted to Massport personnel and Massport's designated contractors only. Tenant's General Contractor (or subcontractors) will be required to have a Massport issued right of entry permit in order to be allowed access to a roof.

2. Prior to the start of roof work or equipment installation on a roof owned by Massport and not part of the Tenant's premises ("Roof" or "Roof Work"), Tenant's General Contractor and any sub-contractor performing related work at the project site shall meet with Massport's representative, to document current conditions and coordinate roof access and procedures.

3. During installation and prior to Final Acceptance, the Tenant's General Contractor shall provide temporary protection for adjacent roof areas that are not within the project area and for all exterior and interior project components against damage and loss. In the event of such damage or loss to the Roof or any adjacent Roof areas caused by the Tenant, the Tenant's General Contractor or any subcontractor or the agents or employees of any of them, Tenant shall require the Tenant's General Contractor to replace or repair such work at no cost to Massport and subject to final approval by Massport.

4. The Tenant's General Contractor shall hire and direct Roof maintenance and repair using a roofing contractor qualified by the manufacturer of the roof system and approved by Massport in advance of any commencement of the Roof Work. The Tenant shall be responsible for meeting the conditions of any existing Roof warranty and shall, at its sole cost and expense, engage the manufacturer to inspect and re-warrant the Roof system.

5. Changes to the roof, including penetrations, and additions or replacement of roof top equipment, shall be subject to Massport's final inspection and approval. The TAA may require the Tenant contract with a licensed engineer to provide a resident engineer to observe the roofing activities in the field and provide a daily or weekly report which incorporates the observations and photos of the day's activities.

6. Protection and Cleanliness

    a. The contractor shall, during the progress of work, keep the roof area clean of all debris. All excess materials, flashing, sheet metal screws, etc. must be controlled, removed, and properly disposed of each work day. At no time are materials or equipment to be stored on the roof. Roofing and flashing shall be weather tight at the end of each work day.

b. Transporting Equipment – At no time should heavy equipment be moved along the roof with dollies made with solid rubber tires or metal wheels.

c. Protect membrane-roofing system from damage and wear during construction. Inspect for deterioration and damage, describe its nature and extent in written report to Massport.

d. Tenant shall be responsible for correcting deficiencies in or remove and replace membrane-roofing system that does not comply with manufacturer's requirements. Tenant shall also repair substrates, and repair or reinstall membrane-roofing system to a condition free of damage and deterioration at the time of substantial completion and in accordance with manufacture and warranty requirements.

e. Upon completion of Roof work, the Tenant's General Contractor or subcontractor shall remove equipment and unused material provided for work and shall leave the Roof in the same condition as existing prior to the performance of the Roof Work.

7. Roof Penetrations - No penetrations or saw cutting may be made without the approval of Manager of Tenant Alterations.Tenant shall provide construction documents which clearly show the location of all proposed penetrations. Soundings (ultra sound or x-ray) of the area(s) of propose openings must be taken prior to approval. Seal all penetration to a watertight condition in a manner acceptable to the roofing manufacturer.

8. New Equipment - Prior to installation of new roof top HVAC equipment, Tenant shall have submitted, for Massport's approval, heating, ventilation, air conditioning design information, cooling and heating loads, and equipment data. Massport shall approve all changes, additions, or replacements of A/C equipment prior to installation.

9. Removal of Old Equipment/Materials - The tenant's contractor shall remove from the roof all non-operable equipment that previously served the tenant's space. All exposed penetrations shall be properly sealed and roof system restored.

10. Quality Assurance

a. The work shall be executed in full accordance with the latest applicable standards and all rulings by state, and local authorities.

b. The Tenant's Contractor shall replace any imperfect or rejected work with work conforming to the requirements of the specification and shall be satisfactory to the Facilities representative and/or field engineer without extra cost to Massport.

11. Physical Inspection by the Authority

a. When a third party roof inspector is required, daily reports shall be distributed to Massport Capital Programs, Tenant Alterations

b. Inspections shall:
   i. Verify that work complies with contract documents and TAA Guidelines.
   ii. Check for physical damage to existing and modified roof system.

Verify that the roof is watertight, all penetrations have been properly sealed and roof system fully restored and is free of damage.

6.2.8 Aircraft Loading Bridges

A. Any new loading walkway and all work associated with the installation and/or the repair or alterations of any type of aircraft loading walkway shall comply with National Fire Protection Association (NFPA) 415, "Standard for Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways" current edition.

B. Detailed information regarding the delivery of the passenger boarding bridges (e.g., timing, travel route, etc.) shall be set forth in a Work Plan submitted for Massport's advance review and approval. (See Section 7.6 for information on Work Plans.)

6.3 Mechanical Systems

6.3.1 General

A. All mechanical system contract documents (drawings and specifications) shall be designed and stamped by a Massachusetts registered professional engineer (P.E.).

B. The design of HVAC systems shall meet all applicable manufacturer standards, SMACNA, ASHRAE, state, and local minimum codes. The Tenant's project designer, as part of the TAA submittal, shall provide Massport with complete information on the characteristics of all HVAC equipment components proposed for the Tenant Alterations in electronic tabular form, and shall update this information at the completion of construction should any of the components be altered during construction.

C. For both indoor and outdoor installations and modifications, all equipment identified under the TAA (whether new or existing) shall be clearly marked with a permanent, weatherproof label indicating the Tenant name, equipment ID, and TAA#. All piping and duct labeling shall be added or maintained in the Tenant space, such as GAS, DOMESTIC COLD, HOT WATER SUPPLY / RETURN, CHILLED WATER SUPPLY / RETURN, MAKE-UP AIR, EXHAUST AIR, SUPPLY AIR, Refrigerant, etc.

D. All HVAC equipment requiring maintenance and repair, including but not limited to AHUs, FCUs, RHCs, VAVs, VFDs, and FPBs, shall have adequate access both to equipment and components such as fans, motors, coils, dampers, fire dampers, etc., and shall not negatively affect the access to adjacent tenant areas or building systems. Any drains/valves for coil winterization shall be added outside of units for ease of access. Equipment added inside of a ceiling shall be installed at a reachable height.

E. Where Tenant Alterations require the use of existing equipment and systems, the Tenant is responsible for the evaluation, repair or replacement, or restoration of the system to working order. NOTE: Typically, tenants operate and maintain the equipment in their spaces; therefore,

Massport may not be aware of maintenance requirements, repair frequency, or equipment reliability.

F. Equipment and systems being installed with the intention to be maintained by Massport shall be controlled electronically down to the space sensor using MPA's proprietary HVAC network controls Energy Management System (EMS). Any new equipment shall also be added to the Massport EMS system to monitor. Terminal A "Main" and "Satellite" and some other locations require that branch zones be on the MPA HVAC EMS "Carrier CCN", regardless of the M&R. Supplemental systems are not required to be on the MPA HVAC EMS.

G. Typical filter configurations for units requiring direct "field side" outdoor air are: 35% pre-filter, 65% to 85% secondary, and carbon box or tray final (may require dusting filter).

H. Base building HVAC systems for Primary conditioning – Tenant space of 1cfm/ft2 is the maximum allowed for supply and return for the space. Additional heating or cooling will require supplemental equipment provided in the Tenant Alterations.

I. Where exhaust is being used, an equal amount of make-up air shall be provided by the Tenant Alterations. An interlock between the exhaust fan and make-up air unit shall be used. This will prevent the exhaust fan from being run without the make-up air unit.

J. Outdoor remote condensers shall be used to reduce heat gains, where possible. If remote condensers cannot be used, the additional gains shall be included in the load calculations.

K. Massport will review TAAs as submitted, but does not necessarily have accurate knowledge of tenant heating and cooling loads, the number of occupants for required minimum outdoor air CFM, or distribution and control. The Tenant's engineer is assumed to have done all of the required design and implementation calculations. The engineer shall verify that Tenant equipment is of adequate size and is operating according to specification, and may be requested to provide these calculations to Massport.

L. Where the installation of rooftop equipment is required, the contract documents shall depict all roof penetrations and associated equipment mounting and support details and structural loadings.

    1. Where equipment is to be installed on a roof with a sled base, the Tenant shall ensure installation will not damage the roof membrane. Information shall be provided in the Tenant's TAA submission on protective element for sled base and any equipment to be installed.

    2. Rooftop equipment that is on a raised curb shall allow for access for maintenance (e.g., catwalk or similar surrounding unit).

    3. Fall protection is required for rooftop equipment located closer than 10 feet from the edge of the roof.

M. Unused equipment and materials shall be removed. Abandonment of equipment is not allowed.

N. During construction, filters shall be installed on supply and return openings, and maintained throughout the project. Filters are to be replaced, not cleaned.

O. Floor penetrations shall be sleeved and sealed against water.

6.3.2 Modifications to Base Building HVAC Systems

The following requirements apply to those areas that are serviced by base building HVAC systems such as chilled water (CHW), hot water (HW), high temperature hot water (HTHW), steam or pre-conditioned air.

Base building HVAC systems include but are not limited to: constant volume with zone reheats, constant volume hot/cold deck single duct, constant volume hot/cold deck dual duct, constant volume single zone with reset DAT, variable air volume w/single zone reset DAT, variable air volume w/VAV master reset, variable air volume constant temperature w/zone VAV and reheat, variable air volume with fan powered terminal boxes with or without reheat.

Base building heating systems vary (Steam, HTHW, HW, GHW, Gas, Oil, or Electric heat).

NOTE: Use of building pneumatic air will not be allowed for the Tenant's new or modified control systems.

A. A minimum of one electronic space sensor monitored by Massport's proprietary network (HVAC EMS) shall be located in an area that will best represent the average space temperature. Large spaces may require multiple sensors.

B. Air flow tests of building systems shall be performed before design. Air and water test and balance reports are required: CFM and GPM, design vs. actual. Balance reports are verification that the air from base building systems does not exceed 1cfm/ft2, that required make-up air is sufficient for the amount of exhaust air, and that the new system does not affect current adjacent tenants.

C. If HTHW and/or CHW systems are being used, the contractor is required to update and submit HTHW and CHW flow diagrams. Massport will provide current flow diagrams in electronic format, and the Tenant shall revise and return the flow diagrams in the same format.

D. Isolation valves, dampers, disconnects, etc., shall be installed to isolate the system, to facilitate service and maintenance.

E. Massport's involvement in the contractor's functional and performance testing shall be limited. The contractor shall demonstrate that installed or modified HVAC systems are capable of maintaining a temperature within 2 degrees of the design set-point in all zones.

F. If dedicated local control of HVAC systems is proposed in the TAA (for operation and maintenance), systems will be designed, installed, tested and balanced in a way that will not adversely affect building pressure or loads in general areas or base building systems outside of the Tenant space (i.e. exhaust fans, make-up air units, etc.).

G. Terminal A at Logan and A Satellite buildings (and other future locations) are VAV systems with electronic network boxes. Modifications to these systems require the involvement of Massport's proprietary HVAC EMS control contractor.

H. HVAC systems within Massport buildings are not the same in all locations. Prior to designing an HVAC system, the Tenant shall determine the type of existing system(s) in the proposed location so that a compatible system can be designed. This can be done by visiting the space and base

systems, or the MPA HVAC department can assist. Do not assume that the equipment installed by former tenants is proper or adequate.

6.3.3 Mechanical Insulation

A. All horizontal insulated piping below 6 feet above the finish floor level shall be equipped with a metal jacket with integral metal banding.

B. Heating tracing shall be used on all piping where needed.

C. Rigid or semi-rigid insulation on HVAC equipment shall be attached using welded pin and speed washer assemblies.

6.3.4 Kitchen Hood System

A. Kitchen hood and kitchen hood suppression systems shall be designed, installed and tested per the current edition of NFPA 96, "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations".

B. Suppression systems shall be interconnected to the building fire alarm system.

C. Tenants shall maintain adequate cleaning of kitchen hood systems and testing of suppression systems in accordance with 527 CMR 1.00 et seq., the Massachusetts Comprehensive Fire Safety Code and with all applicable laws, ordinances, rules and regulations and as directed by Massport's Fire Marshal's Office.

6.4 Electrical Systems

6.4.1 General

A. The requirements of the Massachusetts Electrical and Building Codes, as currently amended, shall be fully met and shall be used as the minimum basis of design.

B. Once approved by Massport, no significant changes shall be made by the Tenant's contractor unless these changes are submitted to, and approved in writing by the Capital Programs Department and by the Massport Electrical Department. Any shutdown of the electrical system requires the approval of the Massport Electrical Department. Application shall be made using the Electrical Shutdown Form (available upon request).

1. The Electrical Shutdown Form shall be submitted to the Massport Electrical Maintenance for review 5 working days prior to the proposed shutdown.

2. To access a Massport Electrical Room, contact the Massport Resident Engineer.

3. No work shall be performed in any electrical panel or enclosure while the equipment is energized.

4. The contractor is responsible for determining which electrical loads are affected by a power shutdown. This requires tracing circuits with tracing equipment including a preliminary nighttime power shutdown to verify the affected loads. All shutdown periods are governed by the tenant airlines and are after the last flight of the day arrives or

departs. All power shall be restored by 3:30am. The normal maximum shutdown period is 4 hours per night; work requiring more than 4 hours shall therefore be performed over several nights. The contractor shall supply back up temporary power for circuits that cannot be shut down for the 4-hour period.

C. All Tenant Alterations are subject to the inspection and approval of the Wiring Inspection representative of the Division of Inspectional Services of the City of Boston and by Massport. Contractors are responsible for obtaining all necessary permits.

D. All Tenant Alterations shall be performed by competent licensed electricians as required by the applicable code, using the quality and quantity of materials at least equal to those specified in the approved contract documents.

E. After the construction of any electrical system, the installing contractor shall prepare and submit complete certified as-built drawings ("As-Built Drawings") showing all parts of the work as actually installed prior to Massport's acceptance of that system and update electrical one line diagrams. As-Built Drawings shall be prepared as provided under Record Drawings in Part 1 "Tenant Alteration & Construction Process", Section 2.3.3 of this Guide.

F. All wiring 600 volt and below shall be copper conductors with No. 12 AWG minimum size, type THW, THHN, THWN, or XHHW, 600 volt insulation as required. A separate green grounding conductor shall be furnished and installed for each feeder and/or branch circuit.

G. All wiring above 600 volt shall be called high-voltage wiring and comply with the following:

1. A contractor working on Massport's high voltage system shall be an electrical contractor that specializes in the installation and maintenance of high-voltage (5kV and 15kV) systems with a minimum of ten years continuous experience as a qualified high-voltage contractor.

2. The contractor shall submit a list of names of personnel certifying that their employees are qualified in the specialty of high-voltage wiring, splicing and cable terminations with a minimum of five years recent experience in the installation of conventional built-up hand taped splicing and cable terminations.

H. No aluminum conductors or conduit are permissible except upon special application and with Massport's approval.

I. The minimum conduit size for homeruns shall be 3/4".

J. Allowable locations for interior and exterior building raceway for 600V and below are shown in the table below. All cable and wire shall be UL listed for its intended use. Raceway and cable that is not prohibited does not imply acceptability without written permission from the MPA Electrical Department Manager.

Allowable Types and Locations for Building Raceway for 600V and Below

Raceway Type	Allowable Location
Type RGS - Rigid Galvanized Steel	• Locations that are subject to physical damage • In wet or dry locations • Exposed or concealed
Type IMC - Intermediate Metallic Conduit	• Locations that are not subject to physical damage • In wet or dry locations • Exposed or concealed
Type EMT - Electrical Metallic Tubing	• In locations not subject to physical damage • In dry locations only • Exposed or concealed
Type PVC - Schedule 80 Polyvinylchloride	• Only in the interior of Parking Garages • Where adequate ventilation is available • Only with prior approval from Massport Fire and Rescue
Type PVC Schedule 40 Polyvinylchloride	• In concrete encased underground duct banks • Transition the PCV to RGS conduit at the last sweep before penetrating above grade
Type FMC - Flexible Metal Conduit	• For flexible connections to vibrating equipment (6-foot maximum length) • In locations that are not subject to physical damage as determined by MPA • In dry locations only • Exposed or concealed
Type LFMC- Liquid-tight Flexible Metal Conduit	• For flexible connections to vibrating equipment (6 ft. maximum length) • In locations that are not subject to physical damage as determined by MPA • In wet or dry locations • Exposed or concealed
BX, AC, NM, or NMC cables	Not allowed in any location for any use
Type MC – Metal Clad cable	Use shall meet the requirements in paragraph 1.4.1.K below.

K. The use of MC cable is limited at Massport-owned properties and may only be used in place of EMT with the following requirements:

1. The MC cable shall be interlocking metal-tape type (steel or aluminum).
2. All conductors shall be 98% soft drawn copper
3. All insulation shall be THHN/THWN or XHHW rated for 600 Volts.
4. Each circuit shall have a separate neutral conductor.

5. Each circuit shall have a green insulated solid copper equipment grounding conductor.

6. Each MC cable connector shall include an insulating bushing.

7. Connectors shall be rated for the type of MC used. Steel armor shall use a set screw type and aluminum armor shall use a saddle type connector. All MC connectors shall be the threaded type.

8. All lighting fixtures shall connect to a junction box. Daisy chaining of MC cable from fixture to fixture is not allowed.

9. All home runs to the power panel shall be run in EMT to a junction box above the ceiling over the point of use, including receptacles, light switches, and emergency fixtures.

10. All MC cable shall be secured to the building structure every 6 feet and within 1 foot of every box.

11. Each MC cable used to power a room lighting circuit or receptacle circuit shall be secured and routed with separation to allow the circuit routing to be traced by eye. MC cable shall be labeled with the panel and circuit number on a permanent tag attached every 20 feet and on each side of a penetration. Each junction box shall include a permanent panel and circuit label.

12. 120v 1-phase single or multi circuit MC cable armor shall be natural finish with black and white conductors and a green grounding conductor. Multi-circuit conductors shall have a dedicated white neutral conductor with a tracing stripe identifier.

13. 208/120v 3phase 4 wire MC cable armor shall be color coded with black, red, blue, white and green stripes with matching conductor insulation. Three wire circuits shall exclude the white neutral conductor.

14. 480/277v 3phase 4 wire MC cable armor shall be color coded with brown, orange, yellow, grey and green stripes with matching conductor insulation. Three wire circuits shall exclude the grey neutral conductor.

15. Attach each junction box to the wall or the building structure between 1 and 3 feet above the ceiling.

16. MC cable shall not be routed horizontally through partition wall studs below the ceiling level. MC cables shall run vertically in the stud pocket to a junction box above the ceiling.

17. MC cable shall not be installed in wet or damp locations or in exposed areas.

L. For lighting fixtures and circuits above removable ceilings:

1. Home runs shall be in EMT raceway from the panel to a junction box above the ceiling over the switch location. MC cable can be used to power the switch.

2. *In walls only*: MC cable shall run vertically from the switch to above the ceiling to a junction box within 6 feet of the first fixture. Additional fixtures shall be connected to the

same circuit with MC cable (6 feet maximum) from the junction box. Each junction box shall be sized for the number of conductors installed plus two.

3. *For lighting fixtures and circuits above fixed ceilings*: Each fixture shall be connected with MC cable to a junction box that is near the perimeter of the fixed ceiling and is accessible from the removable ceiling area.

4. *For receptacle circuits*: Receptacle circuits may be connected with MC cable, provided each receptacle is connected to the circuit in a junction box above the ceiling over the receptacle location.

5. *Electric service:*

    a) Depending on location, home runs between electric panels and junction/distribution boxes shall be installed in RGS, IMC or EMT raceway.

    b) New work within electric rooms is to be hard piped.

    c) New work in exposed locations is to be hard piped.

M. All switches and receptacles, etc., shall be heavy duty, UL-listed and of specification grade.

N. Outlet/junction boxes exposed to weather shall be cast boxes, watertight.

O. All electrical equipment and systems shall be tested for acceptance and the resulting tests shall be in conformance with the contract documents. Tenant or its contractor shall coordinate the testing procedures with Massport's designated site personnel and comply with Massport's requirements. Minimum testing requirements are as follows:

1. The contractor shall be required to perform operating testing and certification of test results that demonstrate the electrical equipment and/or systems installed operate within design intent and comply with the Massachusetts Electrical Code.

2. Equipment and/or systems that require testing are high voltage switches and wiring, transformers, secondary switchboards, motor control centers, generators, transfer switches, regulators, starters and low-voltage power circuit breakers and panel-boards.

3. Within five working days after the testing and submission of certified reports, the system may be energized with the approval of Massport.

P. All lighting systems shall incorporate sufficient local switching to allow maximum economy in the use of energy. Where possible, they shall also use energy saving lamps and ballasts.

Q. Power and lighting distribution panelboards:

1. Panelboards shall be provided with a typewritten index of the circuits before the final inspection is performed.

2. Panelboards shall be equipped with bolt-on type breakers with copper busses, separate insulated neutral and ground buss, connected only at the point of service entrance.

3. Panelboards shall contain interrupting capacity ratings as required by fault current calculations developed by an electrical engineer.

4. For rooms containing panelboards rated 100 amperes or more, a 125-volt, single-phase, 20-ampere-rated, GFCI-type receptacle shall be installed in an accessible location within 25 feet and within the same room.

R. Color coding and phasing shall be required on all new and/or altered electrical work. All conductors shall be identified at all points of termination by color-coded conductors and/or by colored, gummed or plastic tape applied to the conductors as follows:

Voltage	15kV	5kV	480/277V	208/120V
Phase A				
Tracer	Red	Blue	--	--
Band/s	1 Black	1 Black	1 Brown	1 Black
Phase B				
Tracer	Red	Blue	--	--
Band/s	2 Red	2 Red	2 Orange	2 Red
Phase C				
Tracer	Red	Blue	--	--
Band/s	3 Blue	3 Blue	3 Yellow	3 Blue
Emergency – DC, Yellow Emergency + DC, Gray All neutral conductors shall be white. All equipment ground wires shall be green. The same colors shall be used for the same phases throughout the entire project.				

S. Emergency generator equipment, all emergency power distribution panelboards, and all primary and secondary distribution systems shall be separately enclosed within two-hour fire rated construction.

T. Suspended transformers shall include a detail for mounting that is stamped by a Massachusetts Structural Professional Engineer. The detail must contain notes that the design meets the seismic requirements of the Massachusetts Building code.

U. Electric Vehicle (EV) and Electric Ground Support Equipment (eGSE) Charging Stations:

1. All charging stations shall include an external disconnecting means within sight of equipment. The disconnecting means shall be lockable in the open position.

2. Bollards or barriers shall protect all charging stations exposed to physical damage. Wheel stops are not an acceptable means for protection from physical damage.

3. The designer shall evaluate and accommodate for proper ventilation in accordance with applicable codes and standards.

4. Feeders or branch circuits to charging stations shall contain a dedicated meter in accordance with Section 6.12 of this Guide.

5. eGSE charging stations shall be installed in accordance with section 6.10.1 of this Guide.

6. All charging stations must have appropriate signage (per NFPA 70 6.25.43). Signage must indicate the shutoff location and how to secure power. Signage must be approved by Massport Fire Rescue.

V. For demolition of equipment and/or wiring, all associated wiring and enclosures shall be removed back to the source. There shall be no abandoned conductors or cables.

6.4.2 Electrical Distribution / Manhole System

A. Any person entering a high voltage substation, electric room, and/or manhole shall do so only with the knowledge and permission of the site's Facility Manager, Electrical Supervisor and/or Electrical Foreman, who will assign a Massport electrician to be present to observe the contractor's work.

B. Under no conditions will a person be allowed to work in a high voltage substation or manhole alone.

C. The contractor shall be responsible for securing substations, electrical rooms, manholes, etc. against unauthorized entrance during their work and at the end of each working day. The contractor shall notify Massport's designated site representative when leaving the area.

D. All work to be performed on Massport's electrical distribution system shall be fully documented and submitted for approval to the Capital Programs Department. Examples of required documentation shall include one-line diagrams, revised Manhole Data Sheets (indicating ducts utilized) and design calculations to indicate the work's projected effects on Massport's Distribution Network.

E. Electric service will be energized by Massport only after the required tests, inspections, and certificates have been obtained by the contractor, submitted to Massport, and verified and approved by the site Facility Manager or his/her designee.

F. The phasing of conductors by the contractor shall ONLY be allowed in the presence of a designated Massport representative who shall be required to certify that it was accomplished properly.

G. Sub-standard workmanship and materials is unacceptable.

H. Life safety is a primary consideration. The contractor shall provide rubber mats, gloves, boots, and all other safety equipment and precautions for the work required. All persons requiring access to the manhole system shall comply with 29 CFR 1910.146, Permit-required confined spaces.

I. All cable and circuit runs shall be tagged in each manhole, handhole, junction box and/or enclosure in accordance with Massport's standards.

J. All new and existing manholes wherein work is to be accomplished on the street side of buildings at Massport properties shall have lockable manhole covers, specified as LeBaron catalogue # LBW-

288B/MPA, or equal with Neenah Foundry Co. modified DCAC-24. All such manhole covers shall be modified to Massport's requirements. Existing manhole covers that are not lockable will require modifications to existing grade, chimney and patching to finish pavement. Massport will provide manhole identification numbers upon request to the Capital Programs Department. Acceptable or equal manhole frames and covers can be manufactured by Neenah Foundry Co., Neenah, WI and McKinley Iron Works, Ft. Worth, TX. New manholes shall not be spaced more than 350 feet apart.

K. Underground duct banks shall contain a concrete envelope with #4 reinforcing rods and ties. Duct banks shall contain one spare duct for each size and use type. Duct banks shall have an embedded concrete encased soft drawn copper #2/0 grounding conductor that connects to each manhole and the building grounding system.

L. Massport's services, utilities, operations, and use of spaces and facilities shall not be interrupted or affected without prior consent. Contractors shall make prior arrangements with Massport for all operations of this nature, shall abide by all such arrangements, and shall provide and pay for all overtime operations and special equipment required for these purposes.

M. All equipment shall be provided with nametags and/or nameplates, to be furnished and installed in accordance with the following guidelines:

1. Identification shall be accomplished by use of a nameplate having a black background for equipment up to 600V; blue background for 5kV; and red background for 15kV. Nameplates shall be of white core laminated bakelite with engraved letters, securely attached with two Phillips head brass screws or machine bolts with locknuts for all enclosures. Adhesives shall not be used for the mounting of nameplates. Nameplates shall be a minimum of 3 inches long by 1-1/2 inches wide and shall bear an identification code acceptable to Massport or as specified. Letters shall be 1/4 inch high minimum.

2. All new, upgraded or repaired feeders shall be identified by means of a laminated phenolic feeder or branch circuit nametag incised to show 1/2 inch high white lettering on a red (13.8 kV.), blue (5 kV.) or black (600V and below) background. The background color shall be indicated in accordance with the operating voltage of a given feeder and/or branch circuit. Nametags shall be fastened to wiring by means of two plastic cable ties per nametag. Feeders modified by the work shall have their nametags relabeled accordingly.

3. All switchgear shall have colored mimic lines on the front face of the equipment.

    a) 13.8kV equipment shall have Red mimic lines.

    b) 5kV equipment shall have Black mimic lines.

    c) 480V equipment shall have Blue mimic lines.

N. Cable fireproofing shall be two layers of half-lapped tape wrapping for all new and/or repaired exposed feeders in switchgear, trenches, approved boxes, handholes or manholes. Fireproofing tape shall be listed by Factory Mutual (FM labeled), such as Irvington 7700, as manufactured by the Minnesota Mining and Manufacturing Company or Plymouth Brand Ply-Arc 30, and held in place using Scotch Brand No. 27 or Plymouth Brand 3456, 3/4 inch wide, glass cloth tape or approved equal.

O. Testing:

1. After the equipment has been installed, but before it transfers to Massport's system for its acceptance, and at other times as directed by Massport, the contractor shall conduct operating tests for approval. All electrical equipment shall be demonstrated to operate in accordance with the pertinent requirements of Massport.

2. The contractor shall employ the services of an Independent Recognized Testing Company, other than the manufacturer of the wiring or equipment, to perform specified tests. The name of the contractor's testing company shall be submitted to Massport for approval as part of the TAA document submittal, and shall not be changed without Massport's approval. The testing company shall be a member of NETA and all test results shall be submitted on National Electrical Testing Association forms. Test results shall indicate recommended action for sub-par test results. Results shall list recommended test values that should be obtained for a new or repaired installation. Massport shall be furnished with a minimum of two copies of all test results.

3. The testing company shall be required to certify in writing that the work as installed is approved and shall recommend to Massport its authorization to energize the equipment, wiring, or system being tested.

P. There are presently in use at the Logan site both 5kV and 15kV cables that consist of the following:

1. Type I - 15kV or 5kV, cross-linked thermosetting polyethylene, 133% insulated, shielded, thermoplastic jacketed power cable.

2. Type II - 15kV and/or 5kV, ethylene-propylene elastomer (EPR), extruded 133% insulation screen, copper shielding tape and oil resistant thermoplastic jacketed power cable.

The minimum size wiring for 15kV Intertie wiring connecting substations is 3-1-C 500 MCM, 15kV copper cables with 1# 1/0, 600V ground. The minimum size for feeders is 3-1/2 #4/0 and 1 & 2, 600V, unless otherwise noted.

Q. All underground conductors shall be type U.S.E. insulation.

R. Prior to energizing new 13.8 kV, 5 kV or 480 V equipment, the contractor shall furnish short circuit and protective device coordination studies as prepared by the electrical equipment manufacturer or approved engineering firm.

1. When equipment is installed by separate projects by different contractors, all parts and phases of the studies shall be completed by the same electrical equipment manufacturer or electrical engineering firm. The study shall be sealed by a licensed professional engineer in the Commonwealth of Massachusetts.

2. The contractor shall furnish an Arc Flash Hazard Analysis Study per the requirements set forth in NFPA 70E Standard for Electrical safety in the workplace, latest edition. The study shall be performed according to the most current IEEE 1584 Standard.

3. The power system studies shall be modeled using SKM Power Tools Latest Version 9.0.0.7 or later.

4. The studies shall meet the following requirements.

    a) A printed report including a CD or files provided electronically.

    b) Each study report shall include a short circuit study, equipment evaluation, coordination study and a recommendations section.

    c) Each coordination time current curve graph shall show the equipment one line, the equipment damage curves, inrush current level and time and current parameters for all protective devices.

    d) All model project files including all .prj, .drw, .tcc, .lib and all report formatting .fmt files shall be submitted.

    e) The model shall start at the feeder from the Eversource Substation to the building transformer and continue to the buss in every 480 V panel and every 208 V panel connected to a transformer.

    f) 3 phase and ground fault short circuit fault analysis shall be limited to 2 seconds and calculated according to the IEEE Red Book method.

    g) Motors can be summed if the total is less than 50 hp. Include an instruction file indicating all the project option settings for the SKM software.

    h) The Arc Flash warning label shall include the Equipment ID, Massport Job Number and Engineers name performing the study as well as all NFPA 70E required data.

6.4.3 High Mast Lighting Units

Massport has established detailed specifications for high mast type exterior lighting pole/fixture systems. When projects require a new installation of such free-standing exterior lighting devices, consult with the Capital Programs Department to obtain specifications and drawing standards, and comply therewith.

6.4.4 Feeder Selector Switching Units

Consult with the Capital Programs Department for detailed specifications and construction standards for feeder selector switching units.

6.4.5 Standard Electrical / Electronic System Color Coding

Color Coding for Electronic Systems

System	Color Code
Emergency	Yellow
Energy Management System (EMS)	Orange
Access Control System	Blue
Mechanical System	Black
Fire Alarm	Safety Red
Electronic Switchgear Control (ESC)	Brown

System	Color Code
Sound	Green
Telephone	White
Security	No standard

6.5 Plumbing

6.5.1 General

All plumbing work shall comply with the current and applicable Commonwealth of Massachusetts Uniform State Plumbing Code 248 CMR 10.01 – 10.23 regulations in effect at the time of construction.

The contractor shall obtain all required plumbing permits from the Commonwealth of Massachusetts State Plumbing Inspector, pay all fees, and arrange all inspections as required to comply with 248 CMR 3.05.

A. All toilet rooms shall have floor drains located away from main circulation areas, preferably under toilet partition dividers.

B. Each public toilet room shall be equipped with one hose bib (universal) with ball cock handle only. Trap primers shall be provided with shut-off valves at accessible priming devices. Elevated cleanouts shall be installed at carrier drops.

C. Carriers shall be provided for all plumbing fixtures. Concrete masonry unit walls shall be installed behind tile board partitions from the floor up to and through the waste carrier. Backing for reinforcement for nursing seats shall be installed.

D. Automatic faucets and flushometers shall be specified for public toilet room fixtures. Soap and paper towel dispensers shall be hardwired.

E. The contract documents associated with the Tenant Alterations shall depict where vent, waste and cold water pipes tie into existing piping systems. Notes such as 'Tie into nearest available line' are not permitted. The Tenant's engineer is responsible for accurately locating and showing on the plans existing utilities. The engineer shall not rely solely on Record Drawings.

F. The capacity of existing plumbing lines to accept additional flow generated by the Tenant Alterations shall be verified by the engineer. All existing lines that will be used for a tie-in shall be inspected via camera and jetted (cleaned). Plumbing hydraulic calculations shall be stamped by the engineer and submitted to the Capital Programs Department along with applicable drawings.

G. Shut-off valves shall be provided at all plumbing fixtures and at branch take-off locations. Clean-outs shall be provided at all piping changes-in-direction as well as at 45-degree changes. All lines and shutoff valves shall be labeled.

H. If work involves tie-ins to existing water and/or sewer lines, this work will need to be completed during 'off-peak' hours in coordination with Massport's Facilities Department. The contractor shall be responsible for ALL costs associated with 'off-peak' shift work.

6.5.2 Backflow Preventers

A. Unprotected cross connections are in violation of 310 CMR Section 22 of the Drinking Water Regulations of Massachusetts. A cross connection is defined as any actual or potential connection between a distribution pipe of potable water from a public water system and any waste pipe, soil pipe, sewer, drain or other unapproved source. Without limiting the generality of the foregoing, the term cross connection shall also include any bypass arrangements, jumper connection, removal section, swivel or changeover devices, and other temporary or permanent connections through which backflow can occur.

B. Where backflow preventers are required, the Tenant shall submit plumbing diagrams as part of the TAA process, which shall include a single line schematic diagram indicating:

- water lines,
- the separation of domestic and process water,
- the type, size and model number of the backflow preventer to be used, and
- all clearances involved in the installation of the backflow device.

C. The reduced pressure backflow preventer and shut-off valves shall be installed in a horizontal line with the following minimum clearances:

- 3 to 4 feet above the floor
- 12 inches from the wall

Under no circumstances will a vertical installation of a reduced pressure backflow preventer or double check valve assembly be approved, regardless of manufacturer's suggestions or specifications.

D. Reduced pressure backflow preventers shall not be installed outdoors. The backflow device shall be installed on a building or structure in order to protect the device from flooding, snow and ice embedment, freezing, or mechanical damage due to normal activities in the vicinity of the device.

E. When the plumbing diagrams are submitted for approval, they shall be accompanied by a "Boston Water and Sewer Commission Backflow Preventer Device Design Data Sheet" which has space provided for the Master Plumber's License Number and Plumbing Permit Number. Backflow devices shall be installed and inspected under a permit issued by the State Board of Plumbing Examiners.

6.5.3 Grease Interceptor/Trap

A. Grease interceptor/trap shall be by Endura, MIFAB, Zurn, Big Dipper, or approved equal.

B. Tenant shall furnish and install, as needed, a "point-of-use" grease trap bearing the seal of approval from the Plumbing Drainage Institute (PDI). Accessible flow control shall be provided for servicing the unit. The interceptor shall be constructed of seamless engineered thermoplastic and be readily accessible for periodic cleaning.

C. Kitchen waste shall be separated from the sanitary system, upstream of the interceptor. The Tenant's engineer is responsible for locating the existing system and showing proper tie-ins on the construction contract documents.

D. To ensure maximum efficiency, a flow control fitting shall be provided on the inlet.

E. The Tenant shall accommodate cleaning of the interceptors, which occurs through Massport's Master Interceptor Cleanout Term Contract.

6.6 Fire Protection Systems / Safety

6.6.1 Fire Protection Sprinkler and Standpipe Systems - General

A. All new construction and alterations shall incorporate fire protection sprinkler systems throughout with water flow switches connected to a zoned annunciator.

B. Inspection test ports shall be provided and locations indicated on the construction contract documents.

C. Exposed standpipe systems shall be color coded, color galvanized.

D. Piping shall be minimum schedule 40 in Massport-owned buildings. Schedule 10 piping is permissible for ground-up construction under Third Party projects as defined in this Guide, and as may be allowed as permitted by NFPA.

E. Fire department connection with cast bronze identification plate shall be provided to identify service designated: Viz. – "AUTOSPKR', "OPEN SPKR", "STANDPIPE" OR "AUTOSPKR and STANDPIPE".

F. All fire protection contract documents (drawings and specifications) shall be designed and stamped by a MA licensed fire protection engineer.

G. Hydrant flow test data will be provided if it is available and less than 12 months old. Otherwise, a new hydrant test shall be conducted. Massport Water Department will perform hydrant flow tests at Logan International Airport properties only.

H. The Tenant's contractor shall coordinate all disconnects/reconnects of existing and new fire alarm devices with Massport's fire alarm vendor (JCI).

I. Access to above-ceiling valves and equipment shall be provided. In addition, locations of all above-ceiling valves and equipment shall be permanently labeled as approved by the Capital Programs Department. Access shall not be blocked by furniture or equipment and shall be easily accessible above any ceiling tile or access panel, within reaching distance of the ceiling, if possible.

J. Fire protection during demolition: Upon removal of any ceiling tiles or grid, sprinkler heads are to be identified by safety tape or other marking, and all heads are to be turned up and made upright instead of pendant to ensure that they will activate in a fire condition. No area shall be rendered as unprotected throughout the entire duration of demolition and construction of the project unless a fire watch is in place, and a sprinkler impairment permit is used by the Massport Fire Marshal.

6.6.2 Automatic Sprinkler Systems and Protection

A. Automatic sprinkler systems shall be installed in all areas (100% protection) of all new and existing buildings and portions of existing buildings being renovated regardless of size in accordance with

the most recent edition of NFPA 13, "Standard for the Installation of Sprinkler Systems". Exceptions include the following:

1. No sprinkler protection shall be permitted in elevator hoistways, pits, machine rooms or control spaces as regulated by 524 CMR Section 10 "Board of Elevator Regulations", current edition.

2. Requests for the omission or removal of sprinkler protection for any building, portion or area of a building shall be made, in writing, to Massport's Fire Marshal's Office with a statement of reason, including what alternative protection will be provided for consideration.

B. All automatic sprinkler systems shall be designed, installed and tested in accordance with NFPA 13, "Standard for the Installation of Sprinkler Systems," current edition, and any applicable NFPA Standard referenced therein.

C. All sprinkler and standpipe systems, and related equipment and components, such as standpipes, fire pump systems, etc. shall be provided with protection against damage subject to earthquakes in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*, current edition.

D. All fire protection equipment and devices shall be Factory Mutual (FM) approved.

E. All sprinkler heads shall be Quick Response Type. Sprinkler head spacing shall not exceed 15 feet, and sprinkler area protection shall not exceed 130 sq. ft. for each sprinkler head unless approved otherwise by the Massport Fire Marshal's Office.

F. The design approach for all buildings, portions of buildings and tenant spaces, except warehouses, aircraft hangars, high-rise buildings, residential occupancies shall be as follows:

1. All automatic wet-type sprinkler systems shall be hydraulically calculated in accordance with NFPA 13, "Standard for the Installation of Sprinkler Systems," current edition, and the following system design criteria:

   - 0.19 gpm per sq. ft. over a 2000 sq. ft. design area
   - 0.18 gpm per sq. ft. over a 2500 sq. ft. design area
   - 0.17 gpm per sq. ft., over a 3000 sq. ft. design are.

2. Dry systems are allowed in un-heated buildings only. Automatic dry-type sprinkler systems shall have their design area increased in accordance with the applicable requirements of NFPA 13, current edition, unless approved otherwise by Massport's Fire Marshal's Office.

3. Automatic pre-action sprinkler systems, when proposed, shall be double interlock type and designed per the above noted criteria and manufacturer's requirements.

4. The hose stream allowance shall be a minimum of 250 gpm.

G. Fire Department connection at Logan shall be a single inlet 4" dia. Storz Type with screen, cap, lock and chain. Fire Department connection shall be arranged for adequate and unobstructed access by the fire department and located within 100 feet of a fire hydrant and as directed by

Massport's Fire Marshal's Office. Massport's Fire Marshal's Office shall be consulted as to the type and style of pumper connection, off airport. Provide signage at each location.

H. All sprinkler system test valves shall discharge to the outside of the building and/or to a drain receptacle not subject to overflow/water damage and be accessible without the use of ladders, hoses and or special tools.

I. All sprinkler system flow alarm devices shall be set to activate an alarm between 30 to 45 seconds upon water flow and connected to the fire alarm system as an alarm (evacuation) signal.

J. All sprinkler system control valves shall be provided with a lock and chain and tamper switches, and connected to the fire alarm system as a supervisory signal.

K. All automatic dry pipe systems shall be provided with high/low air alarm supervisory switches and connected to the fire alarm system.

L. All sprinkler systems shall be steel piping and satisfy the material specifications requirements per NFPA 13 "Standard for Installation of Sprinkler Systems", current edition. No CPVC shall be permitted in any sprinkler system installation unless approved otherwise by Massport's Fire Marshal's Office.

M. Any required manual releasing station for any type of fire suppression system shall be installed in a location approved by Massport Fire Rescue.

N. Any ANSUL systems to be installed or reconfigured as part of a Tenant Alteration process shall be of the total flooding design only. Appliance specific coverage or design is prohibited. Certain appliances may however require separated fixed dedicated ANSUL nozzles for effective coverage in addition to the total flooding system such as eyebrow broilers or cheese melters.

O. All Tenants, as part of the TAA approval, shall be required to furnish an approved Knox Box upon request of Massport Fire Rescue at the Tenant's expense. The Knox Box shall be installed in an approved, durable, workmanlike manner at the Tenant's expense as directed by Massport Fire Rescue.

P. All fire protection sprinkler systems shall be "hard piped" to allow for a functional flow test of all waterflow alarm devices without the use of additional hose lengths or other equipment and without causing water damage to any area.

Q. All Tenant retails shops and spaces shall be equipped with a dedicated sprinkler control valve and flow switch to isolate only that space, unless the Fire Marshal's Office approves of an alternate arrangement.

6.6.3 Underground Fire Mains and Hydrants

All underground fire mains and fire hydrant systems shall be designed, installed and tested in accordance with NFPA 24 "Standard for the Installation of Private Fire Service Mains and their Appurtenances", current edition. All new fire hydrants shall match the Massport standard, Mueller Super Centurion 5-1/4" right hand open. Fire hydrants shall be located within 100 feet of a fire department connection. The final location of all fire hydrants shall be determined by Massport's Fire Marshal's Office. The type and style of fire hydrants shall be determined by Massport's Facilities Department.

6.6.4 Standpipe System

A standpipe system, if required by the State Building Code, shall be designed, installed and tested per NFPA 14, current edition. The Fire Marshal's Office shall be consulted relative to all requirements and approvals of operational flow and pressure requirements, location, type and style of fire department hose valves and if a 1-1/2" diameter fire hose station will be required for a specific building or occupancy. The standpipe system shall be designed to provide 100 psi residual pressure at all fire department hose valve outlets when supplemented through the fire department pumper connection at 150 psi in-let pressure. Massport's Fire Marshal's Office reserves the right to require additional fire department hose valves during site inspections or at time of final inspection due to unforeseen building conditions requiring accessibility of fire department hose valves. Massport Fire requires additional signage at 150 psi connections.

6.6.5 Fire Pump System

A fire pump system, if required as part of an automatic sprinkler system and/or standpipe system, shall be designed, installed and tested per NFPA 20, current edition. The Fire Marshal's Office shall be consulted relative to requirements and approval of type of fire pump(s) to be used and location of all equipment and operational features.

6.6.6 Commercial Kitchens

A. Kitchen hood systems and kitchen hood food suppression systems shall be designed, installed and tested per NFPA 96, "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations," current edition. The suppression system shall be interconnected to the building fire alarm system. Tenants shall maintain adequate cleaning of kitchen hood systems and testing of suppression systems in accordance with the current edition of the Massachusetts Comprehensive State Fire Code 527 CMR 1.0 and as directed by Massport' Fire Marshal's Office.

B. Kitchen grease exhaust systems shall be electrically interlocked by the installing contractors such that any cooking equipment located under the grease exhaust hood will not operate without the grease exhaust fan operating, and if the grease exhaust fan is inadvertently shut down while cooking, any cooking equipment located under the grease exhaust hood will automatically shut down until the exhaust fan is made operational again.

C. The use of wheeled cooking equipment located under any listed grease exhaust hood, including with or without locking casters or chains and padlocks, is prohibited. All cooking equipment located under any listed grease exhaust hood shall be installed in a stationary manner with sufficient clearance provided below and behind said equipment to allow for proper floor and wall cleaning and disinfection as required. As an alternative, the installation of a total-flooding type Ansul system under the entire grease exhaust hood, rather than an equipment-specific Ansul-type installation, will be permitted to allow the installation of wheeled cooking equipment.

D. All kitchens that produce smoke and/or grease laden vapors shall be provided with the following:

    1. A minimum of one UL-listed Class K type fire extinguisher, which shall be mounted in a durable manner immediately below or adjacent to the manual pull ring for the kitchen fire suppression (Ansul) system. The manual pull ring shall be installed along the natural path of egress leading out of the kitchen to bring occupants to an exit before reaching the pull ring and extinguisher.

2. A durable laminated schematic securely affixed to the wall in a visible location in the kitchen that clearly shows the layout and relevant dimensions of the entire kitchen grease exhaust hood and related duct system from the point of grease entry into the system to the point of grease discharge to the atmosphere outside.

E. All walk-in coolers and walk-in freezers shall be provided with a minimum of one emergency light fixture within said cooler or freezer. In addition, the Fire Marshal's Office may require fire alarm strobe and sprinkler within the cooler.

F. All sprinkler spaces, storage rooms, offices, food preparation areas, walk-in coolers and freezers not in view of the public in which there exists the potential to store items stacked up to the ceiling shall be equipped with permanent signs reading, "No storage allowed within 2 feet of ceiling" and shall have a red line painted on the wall perimeter at a level 2 feet from the ceiling. The signs shall be mounted above the line a minimum of once on every wall. This requirement is inclusive of walk-in coolers and freezers equipped with sprinkler heads.

6.6.7 Extinguishers

Fire extinguishers with visible signage as to their location are required to be installed in all building areas. The specifying architect/engineer or installing contractor shall review NFPA 10, "Standard for Portable Fire Extinguishers", current edition, and make a recommendation as to the appropriate type for the hazard. Generally, Type ABC extinguishers are required inside buildings; Type BC are required near and on airport ramp areas. Massport's Fire Marshal's Office shall be consulted as to final requirements and approval of type, size and location of all fire extinguishers. All extinguishers shall be equipped with a valid Inspection Data Tag indicating its last date of inspection, as well as the inspection firm's certificate of registration number as issued by the Massachusetts State Fire Marshal's Office.

6.6.8 Smoke Control System

A smoke control system, if required by the State Building Code or as a construction alternative, shall be reviewed by Massport's Fire Marshal's Office relative to specific design, operational requirements and final approval. The smoke control system shall be tied into the fire alarm system and be compatible.

6.6.9 Fire Suppression System

Clean agent fire suppression systems, when provided in addition to automatic sprinkler protection, shall comply with NFPA 2001 "Standard of Clean Agent Fire Extinguishing Systems", current edition. Automatic sprinkler system protection cannot be eliminated unless approved by Massport's Fire Marshal's Office.

6.6.10 Fire Alarm System

A. Massport's proprietary fire alarm and signal system provider at Logan is SimplexGrinnell (now Johnson Controls). The Tenant or Tenant's contractor shall contract with SimplexGrinnell to provide shunt, programming, termination services and consulting services. Design service is to be provided by the Tenant's registered professional engineer.

B. All fire alarm systems, components, equipment and operational features shall be made by Simplex, which is a proprietary equipment supplier to Massport. (This requirement is specific to Logan projects only).

C. Fire alarm system design, installation and testing shall be in accordance with most recent edition of NFPA 72 National Fire Alarm and Signaling Code, and NFPA 70 National Electrical Code (Massachusetts Edition) and as amended by 527 CMR, Section 12, of the Massachusetts Electrical Code. The design shall also be in accordance with the State Building Code, the Americans with Disabilities Act (ADA), Massport's Fire Marshal's Office and the requirements of the local authority having jurisdiction.

D. All fire alarm system circuit wiring shall be installed in conduits and/or MC fire alarm cable with red markings.

E. The performance and design of initiating device circuits (IDC) shall be Class A (Style D), unless approved otherwise by Massport's Fire Marshal's Office.

F. The performance and design of signaling line circuits (SLC) shall be Class A (Style 7), unless approved otherwise by Massport's Fire Marshal's Office.

G. The performance and design of notification appliance circuits (NAC) shall be Class A (Style 2) unless approved otherwise by Massport's Fire Marshal's Office. All notification appliances shall have speaker/paging capabilities.

H. Notification (visual/strobe) appliance candela ratings shall be identified on all construction documents and shall comply with location and spacing requirements per most recent edition of NFPA 72 "National Fire Alarm and Signaling Code", Chapter 7, Table 7.5.4.1(a) "Wall mounted" or Table 7.5.4.1.1(b) "Ceiling mounted" or Section 7.5.4.3 "Performance Based Alternative". All visual/strobes shall be synchronized.

I. Smoke detection shall be provided in all electrical rooms and/or electrical closets, fire alarm control and remote panel locations, notification appliance power booster panel locations and in the immediate vicinity of transformers located above suspended ceilings, all storage rooms regardless of size, and all locations specified by 524 CMR "Board of Elevator Regulations".

J. Double action pull-boxes (stations) shall be provided at all required building exit doors and exit doors with an exit sign. Pull-boxes (stations) shall be provided so that the travel distance to any pull-box does not exceed 200 ft. All pull-boxes (stations) shall be provided with protective stopper covers with built-in local alarm devices.

K. HVAC duct smoke detection shall be provided in all HVAC units over 2000 cfm in the air supply side and located per manufacturer's (JCI) recommendations and instructions. The duct smoke detector shall be provided with a remote test switch in the vicinity of the duct smoke detector and be readily accessible for testing. All HVAC duct detectors shall be properly labeled and coordinated with remote test switches, HVAC units on roof, fire alarm control panels and remote annunciators.

L. Fire alarm system evacuation signals shall have a synchronized three-pulse temporal pattern in accordance with most recent edition of NFPA 72 "National Fire Alarms and Signaling Code". No pre-recorded evacuation instruction messages shall be provided unless approved otherwise by Massport's Fire Marshal's Office.

M. Fire alarm control panel and remote annunciators with manual voice paging capability shall be provided and located as directed by Massport's Fire Marshal's Office. Location of panels and annunciators shall be determined during the plan review process.

N. The designer of the fire alarm system shall indicate on plans, the location of all fire alarm system equipment and devices, location of all other fire and life safety system devices connected and integrated with the fire alarm system (such as sprinkler, HVAC, fire suppression devices, etc.) All circuitry location and wiring type shall be identified on fire alarm as-built plans prior to requesting a final inspection. When occupied premises transfer from a former to a present tenant, the new tenant (or master tenant) is required to engage Massport's fire alarm contractor (JCI) to readdress the fire alarm and signal system. All tenant spaces are required to have a (FATC) fire alarm terminal cabinet within their space. The reuse of an existing FATC within the Tenant space may be allowed. If no FATC exists, the Tenant shall provide new.

O. Any Tenant lighting controls, sound system, or other type of audio entertainment system shall be interlocked with the building fire alarm and signal system such that activation of the building fire alarms will override the lighting controls and cause the audio entertainment system to become silent until the building fire alarm system is fully reset.

P. All Tenant retail shops and spaces shall be provided with a manual fire alarm pull station in a location approved by the Fire Marshal's Office.

Q. All fire alarm systems shall be connected to an approved central station as follows:

1. Facility Building control center at Logan.

2. Boston Fire Department and/or local fire department, depending on location of site.

3. When direct connection to a local fire department is unavailable, a central station shall be provided by a Fire Alarm Service Company that is acceptable to both Massport and the local fire department.

R. All new Tenant construction shall be required to provide and install an approved UL-listed emergency key box (Knox Box) in a location approved by Fire Rescue. Instead of a Knox Box, the tenant may provide Massport Fire Rescue with a MasterKey to the property.

6.7 Telecommunication Systems

6.7.1 General

A. Applicable Publications Standards

Except where otherwise noted, all material and workmanship shall conform to the most current industry standards. All equipment shall operate in conformance with these standards as designated for each cable component including:

- EIA/TIA Commercial Building Telecommunications Wiring Standard
- EIA/TIA Commercial Building Standard for Telecommunications Pathways and Spaces
- EIA/TIA Administration Standard for Telecommunications Infrastructure of Commercial Buildings

- EIA/TIA - Commercial Building Grounding and Bonding Requirements for Telecommunications
- ASTM Fire Tests of Through-Penetrations Fire Stops
- NFPA National Electrical Code
- ANSI/IEEE Std. - Recommended Practice for Powering and Grounding Sensitive Electronic Equipment in Industrial and Commercial Power Systems
- Appropriate federal, state and local building codes and ordinances

B. Materials and Equipment List

The contractor shall submit for approval, where applicable, a complete list of all materials, equipment and accessories proposed for its work in accordance with these requirements. The list shall include complete catalog identification numbers and model or system designator, quantities, options and catalog "cuts."

C. As-Built Drawings

The contractor shall provide and keep up-to-date a complete record set of as-built drawings which shall be corrected and shall show every change from the original specifications and contract drawing. These drawings will include:

- Inter-building paths
- Conduit and cable detail
- Entrance facility and equipment rack layouts
- All splice points and cross connect/patch panel points
- Fiber and copper cable lengths installed
- Fiber cable and individual fiber routes
- Copper cable and individual twisted pair routes
- Acceptance Testing
- A complete description of acceptance testing procedures as outlined by product below

D. Identification of Cables and Fibers

1. All cables and individual fibers are to be identified and labeled in the terminating enclosures and at the breakout point on each cable. All labels shall be machine printed.
2. The method of identification and labeling at all termination and breakout locations shall be logical and permanent. Each cable breakout point label shall have, at a minimum, the

number and type of fibers and its destination. Outside plant cables shall be identified by placing a cable warning type label every 5 feet on each cable. These labels shall be pre-printed and able to withstand the environmental conditions of the facility.

E. Applicable Publications and Standards

1. Design, manufacture, test, and install air blown fiber telecommunications cabling networks per manufacturer's requirements and in accordance with NFPA-70 (National Electrical Code), state codes, local codes, requirements of authorities having jurisdiction, and particularly the following standards:

    - ANSI/TIA/EIA-568-A Commercial Building Telecommunications Cabling
    - ANSI/TIA/EIA-569-A Commercial Building Standard for Telecommunications Pathways and Spaces
    - ANSI/TIA/EIA-606 The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
    - ANSI/TIA/EIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications
    - ANSI/TIA/EIA TSB-72 Centralized Optical Fiber Cabling Guidelines
    - ANSI/TIA/EIA TSB-75 Additional Horizontal Cabling Practices for Open Offices
    - ANSI/TIA/EIA-526-14A Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant
    - ANSI/TIA/EIA-526-7 Measurement of Optical Power Loss of Installed Single-mode Fiber Cable Plant
    - I/IEEE C-2 National Electrical Safety Code
    - Install cabling in accordance with the most recent edition of BICSI publications:
    - BICSI Telecommunications Distribution Methods Manual
    - BICSI Cabling Installation Manual

2. Federal, state, and local codes, rules, regulations, and ordinances governing the Tenant Alterations are as fully part of the specifications as if herein repeated or hereto attached. If the contractor should note items in the drawings or the specifications, construction of which would be code violations, promptly call them to the attention of Massport in writing. Where the requirements of other sections of the specifications are more stringent than applicable codes, rules, regulations, and ordinances, the specifications shall apply.

F. Quality Assurance

Material and equipment shall be new, and conform to grade, quality, and standards specified. Equipment and materials of the same type shall be a product of the same manufacturer throughout.

6.7.2 Execution and Installation

A. Outside Fiber Optic Cable Plant Installation

1. **Pre-Installation Site Survey**

a) Prior to the start of systems installation, Tenant shall meet at the project site with Massport's representative and representatives of trades performing related work to coordinate efforts. Review areas of potential interference and resolve conflicts before proceeding with the work. Facilitation with the general contractor shall be necessary to plan the crucial scheduled completions of the equipment rooms and telecommunications closets.

b) Examine areas and conditions under which the system is to be installed. Do not proceed with the Tenant Alterations until satisfactory conditions have been achieved.

2. **Installation**

a) Beginning installation means contractor accepts existing conditions.

b) Contractor shall furnish all required installation tools to facilitate cable pulling without damage to the cable jacket. Such equipment is to include, but not be limited to, sheaves, winches, cable reels, cable reel jackets, duct entrance funnels, pulling tension gauges, and similar devices. All equipment shall be of substantial construction to allow steady progress once pulling has begun. Makeshift devices which may move or wear in a manner to pose a hazard to the cable shall not be used.

~~c)~~ Cable pulling shall be done in accordance with cable manufacturer's recommendations and ANSI/IEEE C2 standards. Recommended pulling tensions and bending radii shall not be exceeded.

d) During any pulling operation, an adequate number of workers shall be present to allow cable observation at all points of duct entry and exit as well as to feed cable and operate pulling machinery.

e) Pulling lubricant shall be used to ease pulling tensions. Lubricant shall be of a type which is non-injurious to the cable material used. Lubricant shall not harden or become adhesive with age.

f) Avoid abrasion and other damage to cables during installation.

g) Cable slack shall be provided in each cable. Follow recommended procedures from the manufacturer regarding length of slack cable ensuring a minimum of 5 meters (approximately 15 feet) of cable which shall be coiled and secured at each termination location. This slack is exclusive of the length of fiber that is required to accommodate termination requirements and is intended to provide for cable repair and/or equipment relocation. The cable slack shall be stored in a fashion as to protect it from damage. The use of suitable enclosures designed for this purpose is encouraged.

h) All cable shall be riser-rated or plenum-rated if required by the installation environment.

B. In-Building Fiber Cable Installation

1. Innerduct for use with fiber optic cable in conduits shall be Fire-Flex Plenum Duct, by Pyramid Industries or approved equal with a pull rope.

2. All cabinets used for terminating outside plant and inside building fiber optic cables shall be of the distribution type.

C. General Instructions

1. All work shall be done at such times as Massport and the Tenant shall agree to be appropriate.

2. Cables shall be run along all routes as shown on the contract drawings.

3. All splices will be enclosed in closures that are properly sealed and mounted on racking in all manholes or in distribution frames in accordance with manufacturer's specifications.

4. All cables shall be terminated at each end as shown on the contract drawings.

5. The contractor shall install all provided and furnished materials in accordance with manufacturer's specifications, recommendations and guidelines.

6. Install all wiring and cabling in accordance with the National Electric Code (NEC) where the provisions of the NEC are applicable.

D. Copper Cable Plant Installation

The contractor shall coordinate the drilling of holes in the concrete slab, sheet rock walls and any other required building penetrations with Massport and the Tenant. Field coordination shall be required prior to installing cable trays (where specified), sleeves, wall or floor penetrations and/or cables.

E. Site Survey

1. Prior to placing any cable tray, feeder, lateral, riser, outside plant cable, or penetration, if required, the contractor shall survey the site to see that job conditions do not impose any obstructions that would interfere with the safe and satisfactory placement of the cables, and arrange to remove any obstructions.

2. For outside plant, duct bank installations, the contractor shall pull a mandrel through the duct to clear the duct of obstructions.

F. Cable Installation

1. **Placing Cable in Conduit**

    a) The contractor shall verify that any conduits to be employed are clear of obstructions unless an exception has been approved in writing. For fiber, innerduct shall be placed in conduit.

    b) A fish line and mandrel shall be used to clear the conduit of obstructions and as a guide for pulling the cable through. A nylon drag line shall be pulled along with each conduit run installed so that future cables may be pulled in that conduit. Conduit bushings shall be used to protect the cable jacket from abrasion as it is pulled through conduit and at each exposed end.

2. **Tie Wraps.** Tie wraps shall be used at appropriate intervals to secure cable in cable trays and to provide strain relief at termination points.

3. **Lubrication.** As necessary, for cable pulls in conduit, the contractor shall use only an approved lubricant compatible with the cable's outer jacket insulation.

4. **Securing Methods**

    a) The contractor shall provide tie wraps, riser cable support grips, vertical and horizontal cable ladders, D-rings and strain relief based upon field conditions to maintain orderly cable organization.

    b) The contractor shall be responsible for securing all cabling in a way to satisfy any structural engineering requirements.

    c) The contractor shall obtain required structural engineering for any item which may affect the infrastructure of the building and submit this to the project engineer for prior review and approval.

    d) All equipment installed in duct banks and manholes shall be specified by the manufacturer for use in outside plant environments and submergence in water.

G. Cable Routes and Clearances

Unshielded twisted pair cable shall be routed so as to maintain the following minimum distances from power sources:

a) 6 inches from power lines of 2 kV or less.

b) 12 inches from high voltage lighting (including fluorescent).

c) 36 inches from power lines of 5 kV or greater.

d) 40 inches from transformers and motors.

H. Grounding

1. All metallic sheathed cables shall be bonded and grounded. Outside plant cables shall be bonded to the termination frame. The termination frame shall be grounded to building ground in accordance with local practice. Cable trays are to be grounded and bonded for safety per NEC standards.

2. Each MDF will have a single ground point. This point is bonded to the integral building grounding system or to the local structural steel. All grounding and bonding in each room will be connected to that point either directly or through the use of ground buss connections.

3. All cables with a metallic component which enter the MDF from outside the building shall be grounded at the point of entrance by 4B1E-W type gas tube protectors.

4. All external cables which enter a building shall conform to the bonding and grounding requirements described in NEC 800-30, 800-33 and 800-40.

I. Materials Management

Equipment and materials shall be properly stored, adequately protected and carefully handled to prevent damage until acceptance.

J. Fire Protection

The contractor shall use only fire-rated cables in accordance with USA NEC in all plenum and vertical riser spaces.

K. Firestopping

1. The contractor shall suitably firestop all riser shaft openings; horizontal sleeve penetrations, both ends of any horizontal conduits and all slot cuts in walls and under the raised access floors which are needed to facilitate cable access/egress.

2. The contractor is responsible for firestopping of all cable tray openings through fire rated structures (i.e. walls, partitions, pressurized access floors, etc.) throughout the facility upon completion of cabling.

L. Protection/Restoration of Premises

1. During installation, and prior to final acceptance, the contractor shall protect finished and unfinished work against damage and loss. In the event of such damage or loss, the contractor shall replace or repair such work at no additional cost to Massport.

2. The contractor shall, as required, during the progress of work, remove and properly dispose of resultant dirt and debris, hang protective plastic sheathing when specified and keep outside plants clean. Upon completion of work, the contractor shall remove equipment and unused material provided for work.

M. Quality Assurance

1. The work shall be executed in full accordance with the current rulings of the latest applicable standards and all rulings by state, utility, and local authorities. Where codes conflict, the more stringent shall apply. Where the specification requirements exceed the requirements of these authorities, codes, and standards, the specification requirements shall prevail.

2. The contractor shall replace any imperfect or rejected work with work conforming to the requirements of the specification and shall be satisfactory to the engineer without extra cost to Massport.

3. The contractor shall report promptly in writing, whenever plans or specifications are believed to be at variance with these requirements, and shall not proceed with such work until further instructed in writing by the Tenant and/or Massport.

N. Physical Inspection

Prior to the conduct of any transmission testing, the following visual inspections shall be performed:

1. Verify that cable has been installed to comply with contract documents.

2. Check for physical damage to Distribution Panels and Termination Blocks.

3. Check that all cabling is properly jacketed, installed and labeled at both ends.

4. Verify that all cable bends are within the manufacturer's minimum bend radius allowed.

5. Check and demonstrate that all cable shields have been correctly grounded or bonded.

6. Verify that the cable is properly supported for termination and long-term placement (approvals shall be obtained from the engineer).

7. Verify that all cables are properly supported and independent of any other support/hanger rods in the ceiling space.

8. Verify that cables have been terminated properly and in proper color-coded sequence.

6.8 Fire Protection Signage

A. All storage rooms shall be provided with visible, permanently mounted signs to read “No Storage within 24” of ceiling or within 36” of any electrical equipment”, and a red line painted 24” below the ceiling on each wall of the room. Signs shall be red background with 1” high white letters.

B. All fire protection system equipment shall be properly identified as to its function.

C. Massport’s Fire Marshal’s Office reserves the right to request additional signage to assist the fire department personnel in locating fire protection equipment, fire hydrants, emergency equipment, etc.

D. Fire Department Connection (FDC) signs on ramps shall be mounted at the location and height specified by Massport's Fire Marshal's Office.

6.9 Security / Access Control

6.9.1 Optional Design Review

For those renovations or expansions of spaces approved through the TAA process that may necessitate changes to an airport's Access Control System, the Tenant may request a design review session as part of the TAA process to review the need to integrate security-sensitive doors and portals into Massport's Access Control System (ACS).

6.9.2 Proprietary Access Control System

Massport monitors all changes and additions to the Access Control System throughout Logan, Worcester Regional Airport and Hanscom Field. Tenants are required to retain the services of Massport's proprietary ACS integrator to specify, acquire, install and integrate all ACS hardware and software which may be required as part of their projects. Once installed and activated, all ACS doors and portals will be maintained and administered by Massport. Tenants shall be required to comply with process for securing changes to Access Control System in accordance with the Access Control Procedures, which shall be provided to the Tenant upon request.

6.10 Environmental Compliance and Sustainability

6.10.1 Overview

A. Regulatory Compliance

1. Massport conducts an ongoing program to assess environmental compliance and pollution prevention practices on Massport's properties, including those operated by tenants. Massport not only works with federal and state agencies and airport tenants to meet mandated regulations, but it is also proactive with its own initiatives, and with facilitating tenant initiatives, in an effort to exceed regulatory requirements and reduce the environmental impact of airport operations.

2. Information on environmental programs at the airport can be found in the Environmental Management section of Massport's website:

   https://www.massport.com/sites/default/files/2025-01/2025-Massport-Sustainability-Design-Guidelines-FINAL.pdf

3. While Massport will make every effort to assist tenants in maintaining regulatory compliance, it is fully the Tenant's responsibility to ensure its construction and operation activities meet or exceed all applicable environmental regulations. Massport is not liable for a Tenant's failure to comply with regulations.

B. Sustainable Design

1. Massport recognizes the importance of incorporating sustainable principles into construction design, planning, and management projects to improve environmental

performance and plan for the longevity of capital investments, assets and critical infrastructure.

2. Tenants serve an important role in contributing to the continued success of Massport's holistic sustainability, net zero and resiliency program. Massport remains committed to providing resources, guidance, and leadership to ensure that tenants effectively demonstrate sustainability and create meaningful, positive environmental impacts while working and building on Massport property.

3. Massport strongly encourages its tenants, to the greatest extent feasible, to:

    a) Design fit-outs and facilities to qualify for a Leadership in Energy and Environmental Design (LEED) Gold certification (or better), even if certification is not being sought. Applicable LEED ratings systems for tenant projects can include Building Design and Construction (BD+C), Interior Design and Construction (ID+C), or Building Operations and Maintenance (O+M)

    b) Support LEED certification processes for Massport Capital Projects and meet sustainability standards of the building for which the tenants are set within

    c) Collaborate with Massport and jointly establish goals for sustainable design, which may be required for certain projects under the TAA process.

4. Massport expects TAA project teams to thoroughly review and comply with all applicable standards outlined in the following documents:

    a) Massport's *Sustainability Design Guidelines (2025)* which ensure a baseline standard of sustainability for sustainability for all Massport projects. The SDGs streamline the achievement of sustainable outcomes by codifying practices that allow the Authority to reach its sustainability, net zero, and resiliency goals.

    b) Massport's *Floodproofing Design Guide (2025)* which establishes standards for ensuring any capital investment and infrastructure can be prepared to deal with the impacts of flooding hazards caused by extreme storms and rising sea levels. Link: https://www.massport.com/environment/sustainability/resiliency

5. Tenants shall consult with Massport's Environmental Management Team in Capital Programs to determine any necessary measures and applicable standards for sustainability, net zero, resiliency, and environmental protection. Questions can be directed to sustainability@massport.com.

6.10.2 Existing Conditions Survey

The Tenant shall contact the Environmental Management Unit to request available information on existing hazardous materials, storage tanks and environmental conditions, such as MCP disposal sites or Activity and Use Limitations, within the proposed project area. Any information provided by Massport shall be verified by the Tenant and supplemented as needed to ensure a complete survey of existing conditions. The Tenant shall provide an existing conditions report that addresses the items below as part of the TAA.

A. **Asbestos Containing Material and Lead-Based Paint.** The Tenant is required to survey the proposed project area for the presence of asbestos using an Asbestos Inspector trained in accordance with EPA regulations and licensed by the Massachusetts Department of Labor and Workforce Development (DLWD).

B. **Hazardous Materials and Storage Tanks.** The Tenant shall provide an inventory of all hazardous materials and storage tanks within the proposed project area, and shall provide a plan describing how they will be managed during construction.

C. **Subsurface Contamination.** The design of a project involving foundation and/or utility excavation shall include an assessment of potential subsurface contamination within the construction area. The Tenant shall engage the services of a Massachusetts Licensed Site Professional (LSP) to conduct the assessment.

6.10.3 Subsurface Investigation

The following procedures shall apply when a Tenant project involves work to accomplish test borings, test pits or other forms of subsurface investigations.

A. Investigation Plan

1. The TAA shall include an Investigation Plan that states the purpose and scope of the investigation, delineates the specific test locations and depth of borings, and describes the sampling and analyses to be conducted.

2. A site plan shall be included that shows the specific area of work, the footprint of where equipment will be needed including elevations of such equipment, and any other ancillary equipment necessary to perform the work.

3. The Investigation Plan shall include the requested schedule (i.e., dates, hours of performance, etc.). The schedule shall also include any follow-up access to the area needed to perform activities such as monitoring well sampling and the frequency of such follow-up (e.g., monthly, quarterly, annually).

B. Concrete Removal

1. Tenant's contractor shall use a concrete coring machine to cut through the existing concrete surface.

2. Contractor shall contain all concrete slurry generated during coring activities in a manner that is confined to the immediate work area through the use of containment booms and shop vacuums.

3. All waste/spoils generated during soil boring well activities shall be pumped or removed by a means that shall not runoff outside the immediate work area and shall be properly disposed of off-site.

C. Utility Clearance

1. The Tenant shall contact the Capital Programs Department to request available information on existing utilities.

2. The Tenant shall verify the location of utilities and follow the required "Dig-Safe" notification procedures as discussed in Section 7.3.

3. A geophysical investigation shall be conducted by a licensed contractor to verify the location of utilities and identify any potential obstructions.

4. Vacuum excavation, air knife or other soft-dig tools shall be conducted at all test locations prior to drilling or excavating to a depth of 10 feet below ground surface for utility clearance.

D. Management of Investigation-Derived Waste

All excess soil generated during subsurface investigations, and water from monitoring well development, shall be drummed and promptly removed by a licensed waste transporter. No wastes and/or containers shall remain at the conclusion of work.

E. Data Submittal

1. The Tenant shall provide Massport with all subsurface data including boring/test pit logs and locations, laboratory analytic results and information on any utilities encountered.

2. The geographical data shall be provided in an electronic format using the latest version of AutoCAD.

6.10.4 Construction Excavation and Dewatering

A. MCP Requirements

1. The Massachusetts Contingency Plan (MCP) is administered by the Massachusetts Department of Environmental Protection (DEP) in accordance with 310 CMR 40 and applies to subsurface work within known or suspected areas of contamination. The Tenant shall be responsible for complying with all requirements under the MCP.

2. Due to nature of the existing "urban fill" material at an airport, the Tenant shall include a Massachusetts Licensed Site Professional (LSP) on its design team to address issues associated with potential soil and groundwater contamination within the proposed project area. If work is to be conducted within a DEP listed "Disposal Site", the Tenant's LSP shall prepare and submit required plans to the DEP, with copies provided to Massport during the TAA review process. The LSP shall oversee all subsurface construction work within area of subsurface contamination.

B. Stormwater Pollution Prevention

1. For any project that disturbs one or more acres of land surface, the Tenant shall submit a Notice of Intent (NOI) to the U.S. Environmental Protection Agency (EPA) requesting coverage under the Construction General Permit. The Tenant shall comply with all applicable National Pollution Discharge Elimination System (NPDES) regulations and shall provide Massport with a copy of the NOI, the acknowledgement letter issued by the EPA, and the Stormwater Pollution Prevention Plan (SWPPP) for the project. These documents shall be provided prior to Massport's issuance of the TAA Permit.

2. During construction, copies of the weekly stormwater management inspection reports shall be maintained on site and provided to Massport upon request.

C. Soil Management

1. Subsurface soil at an airport is typically characterized as "urban fill", and as such commonly contains low levels of contaminants such as heavy metals, polycyclic aromatic hydrocarbons, and petroleum hydrocarbons. Therefore, all soil transported offsite shall be managed in accordance with the MCP and the Massachusetts Similar Soils Policy (WSC #13-500).

2. Prior to issuance of a Massport Permit for Tenant Alteration for a project involving excavation and removal of soil, the Tenant shall submit a soil management plan detailing characterization of the soil and listing potential offsite receiving facilities for Massport's review and approval and DEP's Policy (COMM-97-001) on soil reuse and disposal at Massachusetts and out-of-state landfills.

3. For projects that include subsurface construction work, Massport strongly encourages tenants to reuse soil on-site. Any excavated soils are encouraged to be placed "back in the hole" when feasible. Under the MCP a provision allows "similar soils" on-site to be reused. Tenants are responsible for working with the LSP to ensure compliance with the MCP.

D. Groundwater Management

1. For projects involving excavation, the Tenant shall submit an excavation dewatering plan that details how groundwater will be managed.

2. Water pumped during dewatering shall be recharged onsite or treated prior to discharging to the stormwater drainage system. Minimum treatment shall include a sedimentation tank.

3. For proposed dewatering within a contaminated area, the Tenant shall submit an NOI to the EPA requesting coverage under the Remediation General Permit. The NOI shall provide details for treating pumped groundwater, and a water sampling and analysis program.

E. Health and Safety Plan

1. Excavation within a contaminated area requires a Health and Safety Plan (HASP) in accordance with 29 CFR 1910.120.

2. The HASP shall be prepared and implemented by a Certified Industrial Hygienist, and be maintained on site and available to Massport upon request.

F. Solid Waste Disposal

1. Disposal of solid waste shall comply with 310 CMR 19.00. Tenant shall abide by prohibitions of materials specifically banned from landfills.

2. Refer to https://www.mass.gov/guides/massdep-waste-disposal-bans for a complete list of prohibited materials.

3. For projects that include subsurface construction work, Massport strongly encourages tenants to reuse soil on-site. Any excavated soils are encouraged to be placed "back in the hole" when feasible. Under the MCP a provision allows "similar soils" on-site to be reused. Tenants are responsible for working with the LSP to ensure compliance with the MCP.

6.10.5 Storage Tank and Fueling System Installations and Removals

A. Regulations and Permits

Applicable regulations are to be found at 40 CFR 280, 310 CMR Section 80 and 310 CMR Section 7.00. The Tenant shall obtain a permit from Massport's Fire Marshal's Office prior to installing or removing a tank or fueling system, and shall provide at least forty-eight (48) hours advance written notice to the Environmental Management Unit.

B. Plans and Specifications

1. Any Tenant Alteration which proposes a tank installation or fueling system (e.g. fuel hydrant, distribution pipe) shall provide specifications prepared by a Professional Engineer that include, but are not limited to, the following: tank/piping size and construction, location, product, foundation and anchoring, piping layout, corrosion protection, spill overflow protection, leak detection and alarm systems.

2. All new installations of underground storage tanks on Massport's property shall be double-wall fiberglass. All related underground piping shall also be double-wall fiberglass or other industry-approved reinforced flexible piping.

3. Storage tanks containing volatile organic compounds shall comply with the Massachusetts Air Pollution Control regulations found at 310 CMR 7.00, and shall be outfitted with the required vapor control equipment.

4. For a tank or fueling system removal, the Tenant shall submit a Work Plan that includes: a schedule, methods and operations for tank/piping closure (excavation, purging of tank and piping, tank removal, confirmatory soil sampling), and notification and emergency response procedures in the event of a leaking storage tank or pipe. The Tenant shall identify proposed receiving facilities for the tank and piping, product and any excess excavated material. Work shall not be conducted unless a representative from Massport's Fire Marshal's Office is present to observe the tank or fueling system removal.

C. Document Submittals

1. For releases of oil or hazardous materials encountered during a tank removal, the Tenant shall be responsible for implementing all Spill Response and Notification Procedures (see Section 6.10.6), and for submitting all documents required under the MCP and prepared by an LSP.

2. Copies of the documents shall be submitted concurrently to the DEP and Massport. Within two weeks of removing a tank, the Tenant shall submit two copies of the

confirmatory sampling data and manifest documents for the tank and product to Massport.

6.10.6 Spill Response and Notification Requirements

A. Sudden Release of Oil or Hazardous Material (OHM)

1. A Tenant shall respond to any spill of OHM resulting from its construction activities or other operations and shall be prepared to contain and clean up waste materials in an expeditious manner.

2. The Tenant shall immediately notify Massport's Fire Marshal's Office of any spill of OHM, and shall be responsible for complying with the DEP notification requirements particularly as they pertain to spills requiring notification within two hours.

B. Notification for Exceedance of Reportable Concentration or Reportable Quantity

1. If the Tenant obtains data during subsurface investigations or construction excavation indicating that a Reportable Concentration and/or a Reportable Quantity has been exceeded (as defined in 310 CMR 40.0300), then the Tenant shall notify Massport's Environmental Management Unit and shall be responsible for notifying the DEP and submitting a Release Notification Form to the DEP.

2. The Tenant shall consult with an LSP regarding proper notification procedures and subsequent response actions.

6.10.7 Air Quality

All proposed projects shall comply with the Massachusetts Air Pollution Control regulations found at 310 CMR 7.00, EPA Standards for Industrial, Commercial and Institutional Boilers found at 40 CFR Part 63, EPA regulations for the installation, maintenance and disposal of refrigerant containing equipment, found at 40 CFR part 82, sections of which are summarized below.

A. Construction and Demolition

1. Proposed projects shall comply with 310 CMR Section 7.09 and 453 CMR Section 6.00, and the TAA shall describe measures to prevent excessive emission of particulate matter during construction or demolition.

2. The Tenant is responsible for advance notification to the DEP and shall submit Form BWP AQ 06 at least ten business days prior to construction or demolition, with a copy provided concurrently to Massport.

3. Protective filter material shall be installed on intakes and ducts during demolition and construction, and removed upon completion of the work.

B. Asbestos and Lead Abatement

1. The Tenant is responsible for removing asbestos and/or lead as required to facilitate proposed demolition and renovation projects. Projects requiring the removal of asbestos-containing material (ACM) shall comply with 310 CMR Section 7.15, and the TAA shall

detail the quantity of ACM to be removed and how it will be contained, and shall identify the transporter and disposal site.

2. The Tenant is responsible for submitting Form ANF-001 (also known as BWP AQ-04) to the DEP, with a copy provided concurrently to Massport.

C. Furnace / Boiler Installation

1. The Tenant shall ensure that boilers or furnaces utilizing natural gas, fuel oil (of any grade) or propane for industrial or space heat comply with MassDEP requirements found at: https://www.mass.gov/how-to/compliance-certification-commercial-industrial-or-institutional-boiler.

2. The Tenant is responsible for determining proper stack height, ensuring that the new unit meets applicable emission standards as of the date of installation, and preparing all necessary permit applications and certifications as required by MassDEP and EPA.

3. The Tenant is responsible for proper maintenance and testing of any boiler(s) subject to 40 CFR Part 63 including biennial testing and tune ups and maintaining adequate documentation of testing and tune ups. The Tenant shall provide Massport with copies of all permit applications, certifications and testing/tune-up certifications for boilers/furnaces installed as part of a TAA.

D. Emergency Generator Installation

1. All Tenant installed emergency generators shall comply with current MassDEP and EPA standards. The Tenant shall be responsible for performing any air quality modeling analysis necessary to ensure that the generator does not contribute to a condition of air pollution or adversely impact indoor air quality in any occupied structures. MassDEP regulations governing installation of emergency generators can be found at: https://www.mass.gov/how-to/submit-a-compliance-certification-stationary-engine-or-turbine Massport Fire reserves the right to test emergency generator lighting ("lights out" test).

2. Notification to MassDEP of installation of any new generator greater than 37kW (engine power, not electrical output) is required within 60 days of installation. This notification is the responsibility of the Tenant and a copy of the certification form shall be provided to Massport.

E. Fuel Dispensing Operations

In addition to complying with underground and aboveground tank installation requirements found in Section 6.11.1, any Tenant installing a tank designed for dispensing of gasoline shall ensure that installed equipment is installed and maintained in accordance with MassDEP Vapor Recovery program requirements. MassDEP regulations can be found at: https://www.mass.gov/guides/massdep-stage-i-ii-vapor-recovery-program

F. Installation and/or Removal of Refrigerant Containing Equipment

The Tenant is responsible for the proper handling and disposal of refrigerant containing equipment located on Massport property. Records of refrigerant used in new or repaired systems

shall include type of refrigerant and total system charge. Records of reclamation and proper recycling of old refrigerant shall include type of refrigerant recovered, quantity recovered, location of licensed offsite reclamation facility, and name of licensed technician. All refrigerant related records shall be submitted to Massport prior to project completion.

6.10.8 Wastewater

To ensure compliance with the Sewer Use Regulations (360 CMR Section 10) and Drinking Water Regulations (310 CMR Section 22.00) the Tenant shall determine applicability of the regulations during the TAA process. This will include examining the following items.

A. If the project includes adding or altering an existing storm drain or sanitary sewer connection (such as the installation of an oil/water separator), a permit may be required. To connect to a municipal sewer or a Massachusetts Water Resources Authority Sewer, it may be necessary to obtain a DEP Sewer Connection and Extension Permit (360 CMR Section 10.006(5)).

B. Identify any additional permits that are required in accordance with 360 CMR Section 10.007. These could include: Sewer Use Discharge Permit; Septage Discharge Permit; Direct Connection Permit; Municipal Permit; Landfill Permit; Temporary Construction Site Dewatering Permit; Group Permit or a General Permit.

C. If the project includes the addition or removal of a backflow prevention device the Drinking Water Regulations (310 CMR Section 22.00) shall be adhered to. Installation approval for a backflow prevention device shall be obtained from the local water department. Notification also shall be provided if a device is being removed.

6.10.9 Wetlands Permitting

All Tenant Alterations within a wetland resource area or a buffer zone shall comply with the requirements of the Massachusetts Wetlands Protection Act (310 CMR Section 10.00). If an application to the local Conservation Commission is required, the Massport Environmental Management Unit will review and sign the Tenant's application. The tenant's environmental consultant must represent the project at any public hearing.

6.11 Fuel Farms and Storage Tanks

6.11.1 Fuel Farms, Fuel Pipe Lines, Fuel Hydrant Pits and Fueling Ramp Drainage

A. Work associated with the installation, repair and/or alteration of any fuel farm storage area, fuel pipeline, fuel hydrant system pit, aircraft-terminal ramps, etc. shall be accomplished in full compliance with the applicable codes and regulations including but not limited to, state codes and state fire prevention regulations, NFPA 415, "Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways", current edition, American Petroleum Institute Standards, EPA Regulations, Codes of Federal Regulations, etc. and as directed by Massport's Fire Marshal's Office.

B. In addition to the above, any and all work associated with fuel systems on Massport properties shall be conducted in full compliance with Massport's Rules and Regulations as well as applicable rules, regulations, ordinances and statutes.

6.11.2 Storage Tanks

A. All underground and above ground storage tanks and associated piping systems shall be designed, installed and maintained in full compliance with M.G. L. Chapter 148 "Fire Prevention Laws", 527CMR 1.00 "Massachusetts Comprehensive Fire Safety Code," NFPA-30 "Flammable and Combustible Liquids Code", 502 CMR 5.00 "Permit and Inspection Requirements of Aboveground Storage Tanks of More Than Ten Thousand Gallons Capacity", and 310 CMR 80.00 "Massachusetts Underground Storage Tank Systems Regulations."

B. Prior to new storage tank(s) going into operational service, said tank(s) shall be properly leak tested by an approved tank testing company in accordance with 502 CMR 5.00 or 310 CMR 80.00. Properly documented test reports shall be submitted to Massport's Fire Marshal's Office. All underground and above ground tanks shall be properly permitted with Massport's Fire Marshal's Office via Massport Environmental Management. Further, underground tanks shall be properly registered with MassDEP via the Massachusetts Department of Environmental Protection (MassDEP) online UST Data Management System. Above ground storage tanks of 10,000-gallons or greater capacity shall be properly approved and permitted by the Massachusetts Department of Fire Services (MassDFS).

C. Storage tank removal shall be performed in full compliance with the laws and regulations stated in Section 6.11.2.A above and under the oversight of a Massachusetts Licensed Site Professional (LSP). Application for appropriate Tank Removal and Transportation Permit shall be received by Massport's Fire Marshal's Office via Massport Environmental Management at least two weeks prior to scheduled tank removal work. The Fire Marshal's Office approval shall be obtained prior to advancing removal work. Underground storage tank removals shall be properly documented with MassDEP via the UST Data Management System. Removal of underground storage tanks exempt from registration requirements shall be documented and reported to MassDEP using MassDEP's UST System Removal/Closure-in-Place forms. Removal of aboveground storage tanks 10,000 gallons or greater capacity shall be reported to MassDFS in accordance with the requirements of 502 CMR 5.00.

6.11.3 Flammable, Combustible Liquid and Fuel Storage Tanks

Massport's Fire Marshal's Office shall be consulted as to the design, installation and specifications for fire protection and fire prevention requirements for all proposed above ground storage tanks regardless of liquid or fuel type. Massport's Fire Marshal's Office shall determine all requirements.

6.11.4 Fuel Islands

All facilities, public and private dispensing of gasoline or other motor fuel shall be equipped with appropriate automatic fire suppression and detection system and supervised for automatic alarm re-transmission for emergency response. This requirement applies to Massport's operations and the operations of its tenants (for example, car rental/leasing operations, airline service vehicles, bus transportation, etc.) Massport's Fire Marshal's Office shall be consulted as to all design requirements.

6.12 Utilities Control

6.12.1 General

All connections to Massport's electrical and water systems shall include a dedicated meter. New meters and associated equipment (disconnect, CT cabinet, encoder, etc.) shall be located in Tenant space and accessible to Massport Utilities. Any exceptions shall be approved in writing by Massport Utilities. Prior to removal or installation of an electric or water meter, the Utilities Management Department shall be contacted at (617) 568-3605.

6.12.2 Electric Metering

A. All prospective and existing tenants shall be required to submit an Electrical Load Data and Meter Specification Form for each project with all pertinent data filled out in the TAA. The Tenant and its electrical engineer of record shall be responsible for completing these forms and for the accuracy of the information provided. The Tenant shall include in the design documents, the specifications for meters, meter sockets and if applicable, the current transformers (CTs) and potential transformers (PTs).

B. New electric meter shall be Itron Centron, in the appropriate class and form, according to the table below.

Massport Approved Itron Centron Electric Meters*

Phase	Application	Voltage	Class (Max Amps)	Form	Type
1	Self-Contained	120/208	200	12S	CN1SR3
		120/240	200	2S	C1SR3
			320	2S	
3	Self-Contained	480 and below	200	16S (wye)	CP3SDR3
				12S (delta)	
			320	16S (wye)	
				12S (delta)	
	Transformer	600 and below	20	9S	
		Over 600 with PTs	20	See Massport Meter Socket Specifications	

* Contact Massport's Utilities Department for meter applications not shown on table

C. Massport' s Meter Socket Specifications shall be used to determine rate and style or meter and meter socket, as well as any other required equipment. For new primary rate customers with interior switchgear, metering shall be on the secondary side of the transformer with transformer loss compensation. For exterior switchgear, metering may be located on the primary side with permission of Massport. Electrical connections shall be made consistent with the requirements of the Massport electric construction specifications.

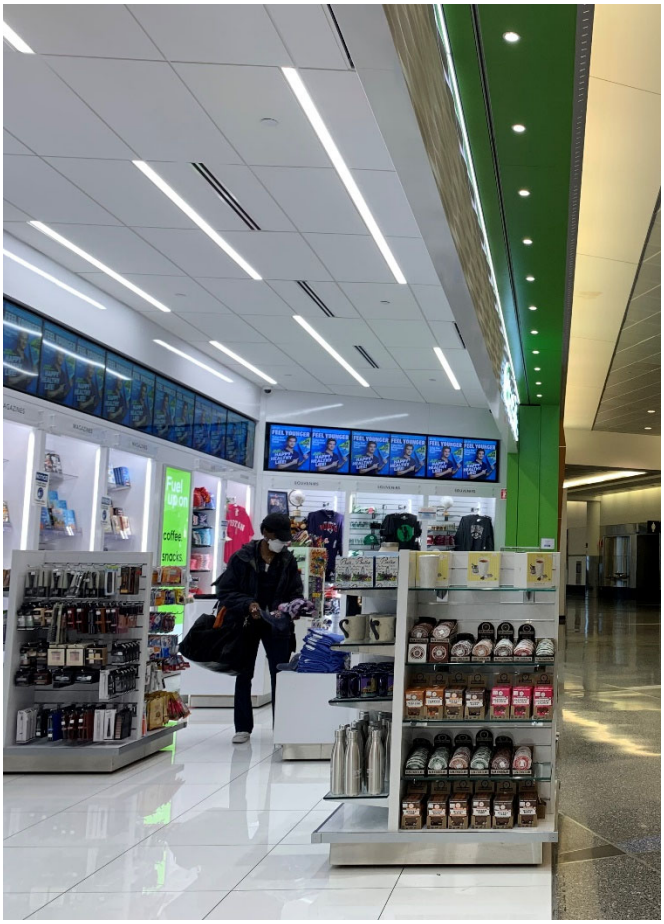
D. Meter sockets, CTs and PTs shall be specified by the Tenant's design consultant and paid for by the electrical contractor. Meter sockets shall be wired in accordance with Massport's Meter Socket Wiring Diagrams. Meters shall be programmed by the Massport Utilities Department. Refer to Electrical Load Data and Meter Specifications document. The Electrical Load Data and Meter Specification Form are mandatory submittals.

6.12.3 Water Metering

A. The Plumbing Contractor shall provide a Badger water meter at the supply, graduated in cubic feet, and located in an accessible area. Meter shall contain an Itron model #100W-R Encoder Receiver Transmitter (ERT). ERT shall not be concealed and serial number shall be visible from floor after installation.

B. Additional requirements are provided in the following Massport Utilities documents:

1. Meters up to 1": Cold Water Meter with Itron ERT Specification - MPA 0-1in
2. Meters 1.5-2": Cold Water Meter with Itron ERT Specification - MPA 1.5-2in
3. Meters greater than 2" shall be Badger with Itron ERT.



Concessions in Boston Logan Airport

(End of Section)

7. CONSTRUCTION CONTROLS

7.1 Preparation for Construction

A. The Tenant's contractor, before commencing work, shall verify all governing dimensions and field conditions at the work site and shall examine, to the extent reasonable, all adjoining work, systems and substrates on which its work is in any way dependent according to the approved project documents.

As may be required, the Tenant's contractor shall employ imaging technology (X-ray, ground-penetrating radar or similar) and/or vacuum excavation methods to survey buried or concealed conditions.

All cores in existing concrete slabs shall be scanned with ground penetrating radar (GPR) to mark and avoid cutting of slab reinforcement and/or conduit. Coring of slabs shall not damage existing reinforcement of structural components. Where coring requires addition of reinforcement to structural elements, details shall be submitted to show how reinforcement will be integrated with the original structure.

B. If the Tenant's contractor or any of its subcontractors of any tier knows or reasonably should have known, by virtue of knowledge of construction industry standards, that any of the approved contract documents are at variance with applicable laws, statutes, building codes, regulations, or ordinances, in any respect, the Tenant's contractor shall promptly notify the Capital Programs Department and the Tenant, in writing, of any necessary changes which shall be accomplished by the Tenant or its design consultant.

C. In its scheduling, procurement and cost estimating, the Tenant should anticipate that its work may be interfered with or delayed from time to time by the acts, omissions, or scheduling of other contractors engaged in work in adjacent areas by Massport or by other tenants.

D. The Tenant's contractor(s) are responsible for securing all permits that may be required for the proposed Tenant Alterations.

E. The term "coordinate" or "notify" shall be understood to mean the presentation of complete information (to include any drawings or sketches where appropriate) to fully define the nature and duration of the proposed actions. The presentation shall include disclosure of any potentially hazardous or weather-vulnerable consequences of the activity when applicable. The Tenant or Tenant's contractor shall not proceed with such activity unless specifically approved by Massport.

7.2 Safety During Construction Activities

A. The Tenant's contractor shall protect site personnel, occupants and the public from potential safety hazards created by any construction activity.

B. All Tenant contractor work activities shall comply with all applicable occupational and environmental safety and health laws, regulations, standards, ordinances, codes and other similar requirements. Such requirements shall serve as minimum guidelines for all activities of the contractor and all other parties entering Massport premises in connection with the Tenant Alterations.

C. Prior to the start of construction, the Tenant contractor shall provide Massport with a written Health and Safety Plan (HASP) for review. The HASP shall include procedures to control all hazards created by the construction. Example hazards include, but are not limited to, housekeeping, fall hazards, noise, dusts and odors, fires and explosions due to hot work, chemical and solid waste storage, electrical hazards/lockout tagout, trenching, crane activities, aerial lift and overhead hazards, confined space entry, lead and asbestos. The HASP shall be fully compliant with all applicable laws, regulations, standards, ordinances, codes and other similar requirements.

D. OSHA 10-hour training cards must be onsite for every worker.

E. A contractor found not in compliance with applicable occupational and environmental safety and health laws, regulations, standards, ordinances, codes and other similar requirements, or project safety and loss prevention requirements, will be notified in writing and given a specific time period in which it shall correct the unsafe condition(s) and/or unsafe acts. Failure to correct the identified condition(s) in a timely manner may result in the shutdown of the activity. Regardless, Massport project staff and Massport's designated representatives shall have the authority to immediately shut down any construction operation deemed by Massport to represent a condition imminently dangerous to the life and health of employees, occupants or the public.

F. All construction accidents involving personal injuries resulting in a workers' compensation claim, property damage, a chemical spill, fire, crane, automobile or mobile equipment vehicle shall be reported to Massport within 24 hours. An accident investigation shall be completed by the contractor or designated representative within 14 days of the incident. Completed reports shall be forwarded to Massport and shall identify cause(s) of the accident, the corrective actions proposed and a timeframe for implementation and completion.

7.3 "Dig-Safe"

A. "Dig-Safe" is the name of the Utility Underground Plant Damage Prevention Authority within the Commonwealth of Massachusetts. They may be contacted by calling 811 or (888) 344-7233 or through their website at www.digsafe.com.

B. Contractors shall notify "Dig-Safe" of any excavation, demolition, or explosive work in public or private ways, or in any Utility Company Right of Way or easement.

C. This notification shall be made at least 72 hours prior to the work. Such notice shall set forth the name of the street or the route number of said way, and an accurate description of the location and nature of the proposed work. In order to ensure accuracy, Massport requests that such notification not be made more than 30 days before the work.

D. "Dig-Safe" is required to respond to the notice within 72 hours from the time said notice is received by designating at the locus the location of pipes, mains, wires, or conduits.

E. Contractors shall not commence work until "Dig-Safe" has responded as noted above. The work shall then be performed in such a manner, and with reasonable precautions taken, to avoid damage to utilities under the surface in said areas of work.

F. Prior to the "Dig-Safe" notification, Massport requires contractors to provide their superintendents with current "Dig-Safe" regulations, and a copy of Massachusetts General Laws, Chapter 80, §40.

G. If the Tenant has not commenced work within 60 days after notification to "Dig-Safe", the Tenant shall be required to re-notify "Dig-Safe".

H. Each "Dig-Safe" number issued is valid for 30 days. If project extends past 30 days contractor must call "Dig-Safe" to receive a new number.

7.4 Trench Approval

A. In accordance with M.G.L. c. 82A, §2 and 520 CMR §14.03, prior to an excavation of a trench, the contractor shall obtain a permit for the excavation ("Trench Permit") approved by Massport.

B. The permit applies to excavations in excess of 3 feet below grade and the depth of which is, in general, greater than the width, but the width of the trench, as measured at the bottom, is not greater than 15 feet.

C. The contractor shall take necessary steps to provide appropriate protections when trenches are unattended. Necessary steps shall include one of the following: erecting a fence that is at least 6 feet tall; providing appropriate signage (DANGER – OPEN TRENCH); using a road plate that is at least ¾-inch thick steel; posting an attendant; or backfilling the trench.

7.5 Inspection During Construction

A. Massport shall be allowed 24-hour access to the Tenant's construction site(s). A Resident Engineer may be assigned by Massport to each tenant project and will review ongoing and completed construction work. The Tenant's contractor shall permit these resident engineers, as well as the State Building Inspector and representatives of Massport's Fire Marshal's Office, and Massport Safety to have unlimited access to the work site, and shall respond to all reasonable requests to further their ability to observe work in progress or complete other investigations or tests. Such inspections shall not relieve the Tenant's contractor of any of its obligations under its agreement with the Tenant, or any applicable laws, codes or regulations.

B. Massport shall have the authority to reject any work, fixtures, systems, materials, equipment, furnishings, or any component of the work that is not as required or as specified in the approved contract documents. Any such rejection shall be communicated in writing to the Tenant.

C. Massport may, at its option, or if required by the State Building Code, in cases where proposed construction is of a complex nature, require the Tenant to hire a competent resident engineer or inspector to be present at all times during the construction period. For projects that necessitate work in multiple locations within a facility, or for those with a value exceeding one million dollars ($1,000,000), Massport may require that the Tenant provide a dedicated project coordinator or construction manager.

7.6 Work Plans

A. For work that will take place outside of the Tenant's leased premises or which can reasonably be expected to affect the systems or operations of the facility or the experience or safety of passengers or other building users, the Tenant's contractor shall submit a Work Plan Form (the "Work Plan"). Examples of activities requiring a Work Plan include:

- Deliveries

- Demo or significant equipment removal
- Fencing/barricading
- Mobilization
- Coring, cutting or opening roofs, walls, or other areas which may affect adjacent activities
- Crane activity

B. The Work Plan shall be prepared using the standard template provided by Massport.

C. All Work Plans require the following:

- A physical plan showing the location of the space in which the work is to take place, as well as plans laying out the work as proposed. Plans may not be hand-drawn.

- An Emergency Contact List, prepared using the template provided by Massport. Information shall be filled in for the Construction Manager (Tenant name goes there), designer if any, and contractor(s).

- A current insurance certificate for the contractor, naming both the Tenant and Massport as additional insured parties.

- A detailed description of the work to be performed including identifying any work hazards and public safety hazards and how these are being controlled.

D. If other permits are being obtained as part of this work (electrical, plumbing, or sprinkler permits, for example), those permits must be obtained first and attached to the Work Plan transmittal.

E. Work Plans shall be supplemented with such other materials that the Tenant believes can facilitate Massport's review, such as schedules, photographs, and cut sheets.

F. The Tenant shall submit the Work Plan package IN FULL; individual emails and files shall be avoided. The Work Plan shall be submitted electronically to the Manager of Tenant Alterations and to the Massport Resident Engineer assigned to the Tenant Alteration.

G. Massport will review and either approve the Work Plan or approve the Work Plan with conditions, with which the Tenant's contractor and/or subcontractors shall abide. Work Plans require approximately 5 working days to be routed and commented on once they have been submitted in full and any needed corrections made.

7.7 Construction Operations

A. All construction at Logan International Airport, Worcester Regional Airport and Hanscom Field shall comply with the Massachusetts Port Authority's Logan Airport Rules and Regulations, Regulation 740 CMR 21, as currently amended, as well as all applicable local, state and federal regulations.

B. All facilities will continue in full operation throughout the period of the Tenant Alterations. Where the operations of Massport's services, utilities, functions, spaces and facilities conflict with contractor operations, Massport's operations will take precedence. Contractor's work hours shall be approved in advance by Massport, which may require that all or part of the proposed work take place at night or other off-hours.

C. All work shall be performed by competent tradespeople licensed as required by their respective trade's codes and regulations, using materials of a quality equal to or greater than that specified by code and approved by the Engineer of Record.

D. The Tenant and its contractor shall familiarize themselves with other ongoing projects by Massport or by other tenants which may be taking place in the same or adjacent areas. The contractor shall coordinate the progress of its work with that of others working at the same

Jet bridge Work at Logan Airport

facility.

E. A complete set of plans shall be available on the work site at all times. All permits issued for the project shall be posted at the work site.

F. When work is being performed onsite with tradespeople the Superintendent from the General Contractor shall be present during this time.

G. Once approved by Massport, no significant changes to the proposed Tenant Alterations (including but not limited to changes in layout, modifications to building structural elements, or large-scale material substitutions) shall be made by the Tenant or the Tenant's contractor unless these changes are resubmitted and approved in writing by Massport and, if applicable, the State Building Inspector.

H. When access or traffic control, special fire hazards, or other public safety issues arise as a result of project activity, Massport may require fire or police details, overtime operations and/or special equipment services. In such cases, the Tenant or the Tenant's contractor shall make arrangements for and pay all charges in connection therewith. Such services shall be provided

only by assigned representatives of the Massachusetts State Police and/or Massachusetts Fire Rescue Department unless otherwise determined by Massport.

I. Contractors shall advise the Capital Programs Department at least 24 hours in advance of all airside deliveries of equipment or materials. Under no circumstances will contractor equipment or vehicles be permitted on the aircraft ramp or apron without proper escort, and all are subject to aircraft operations area vehicle movement regulations.

J. In most cases, neither official contractor's vehicles nor employee vehicles will be permitted to park at the terminals or the job site. However, in any instance in which contractor parking is allowed, it shall be coordinated with the Capital Programs Department.

K. For roadway lane closures, the following requirements shall apply:

1. Any work impacting the arrivals or departures roadways on Massport's properties shall be subject to Massport's prior written approval. Work shall be performed during off-peak hours as determined by Massport. At no time may any roadway be fully closed without Massport's approval. Lane closures will be reviewed on a case-by-case basis and may be affected by holidays, weather, and other circumstances.

2. The Tenant is required to submit a Traffic Management Plan, inclusive of the following:

    a) Provide a drawing, a supporting narrative and a schedule of work to be done, at least one week prior to the work date(s). This submittal shall include, but not be limited to, a description of all lanes affected, method of lane closure(s), the anticipated need for police details, equipment to be used, temporary lighting, and signage and cleanup procedures.

    b) The Traffic Management Plan shall conform to the current Manual on Uniform Traffic Control Devices (MUTCD), including all supplements and revisions thereto and the latest revisions to Part IV, thereof.

    c) Complete and submit a Roadway Lane Closure Request Form to the Capital Programs Department prior to the scheduled start of work for each separate lane closure. The Tenant shall be required to notify Massport Operations Department prior to the scheduled start of each lane closure and also at the conclusion of work. Massport reserves the right to deny permission to initiate any lane closure or roadway work on a daily or nightly basis as may be deemed necessary by airport operational requirements, unsuitable weather conditions, or for any other reason.

L. Cranes and other construction equipment with an overall height in excess of 25 feet shall be lowered during hours of darkness, or be equipped with obstruction lighting in accordance with all current FAA regulations. Notification to FAA may be needed where cranes may potentially affect airfield operations. Such notification shall be made in coordination with Massport. A crane permit shall be issued by the Capital Programs Department for crane activities. Request a Crane Checklist, which details the information required for this permit.

M. Massport's passenger elevators may not be used for the removal of debris, or for the delivery of materials. Durable floor and wall coverings shall be provided by the Tenant's contractor in any service elevator cab used for deliveries to protect against damage. Hand carts used for material

deliveries shall have pneumatic tires to protect the automatic door mats and rubber bumpers to protect interior furnishings. Hand carts must always be in positive control. No hand carts, dollies, etc. will be permitted on escalators. Contractors shall not use passenger luggage carts to transport tools and materials. Personnel access and material deliveries to the work site are to be by designated and approved routes only. No concrete, plaster, terrazzo, debris or other bulk materials may be brought through public area concourses unless approved by Massport. Massport reserves the right to back-charge the Tenant or Tenant's contractor for any damage done to Massport's property. Deliveries affecting the Air Operations Area (AOA) shall be coordinated a week in advance.

N. Construction areas shall be kept clean. Construction debris shall be removed daily by the Tenant's contractor; no debris shall be stockpiled on the site without prior written permission of Massport. Footprints shall be cleaned continuously outside the construction site; walk-off mats shall be used and replaced frequently. Dust shall be vacuumed to prevent it travelling outside the work space. No food or drink shall be left onsite as it attracts rodents. Tenant's contractor shall be responsible for the placement of a covered dumpster if required by Massport. If Massport finds it necessary to remove debris, repair damages to Massport's property or equipment, or otherwise clean up after the Tenant's contractor, Massport reserves the right to back-charge the Tenant or Tenant's contractor.

O. The storage of construction materials shall be controlled on sites to avoid unsightly appearance, to allow safe egress and navigation around the site, and to prevent winds or jet blast from scattering materials. Appropriate storage areas, containers and methods shall be provided by the Tenant's contractor.

P. All construction areas within the aircraft operations area (AOA), or in a public area, shall be properly barricaded, (and, in the case of the AOA, identified with flashing lights during hours of darkness) to prevent accidental entry by pedestrians, vehicles, or aircraft. Massport may require that certain construction work in public areas be screened for the protection of the public. Such screening shall be constructed of durable materials and shall be finished in a manner that is visibly attractive.

Q. Construction project signs shall be limited to project identification information. These signs shall be provided for each project in a standard format by Massport. In some cases, graphics and visuals may be allowed for construction fencing or interior temporary barricades.

R. Contractor vehicles and crews working within the AOA may be required to be equipped with a radio operating at a frequency assigned by Massport. Otherwise, escorts shall be provided for all vehicles.

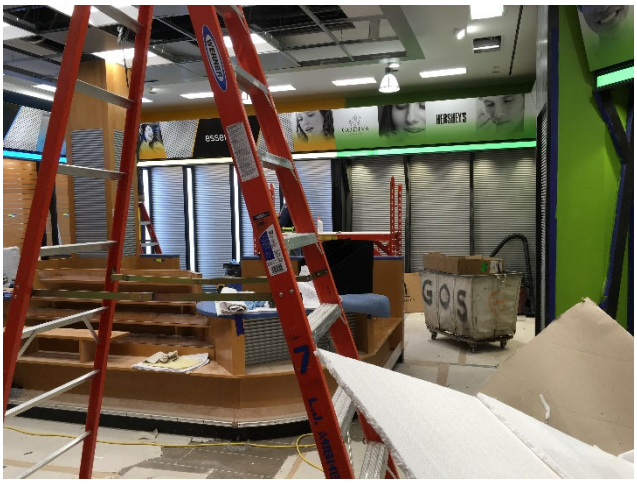
S. Massport shall have the right to photograph, videotape, film, or in any other manner document the progress of the Tenant Alterations at any time, and to use such documentation for any purpose. The Tenant's contractor shall coordinate the photography of the work and of adjacent affected work areas as requested by the Capital Programs Department.

T. Contractors working on other projects may occasionally need to gain access to the Tenant's area under construction. The Tenant and its contractor shall fully cooperate and coordinate their project work with that of other projects to the maximum extent possible to avoid or mitigate any delay or hindrance of either's work. The Tenant shall provide written notice to the Capital Programs Department if the Tenant cannot reasonably coordinate its work with that of others.

7.8 Protection of Property and Tenant Alterations in Progress

A. The Tenant's contractor shall take all responsible precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury, or loss to:

1. All the work and all materials, equipment, systems, fixtures, and furnishings to be incorporated therein, whether in storage on or off of the work site, under the care, custody, or control of the contractor, subcontractors, subordinate subcontractors of any tier or suppliers; and



Concession under Construction

2. Other property at the work site or adjacent thereto, including but without limitation, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction; and

3. Work of Massport or its contractors, provided, however, that the Tenant's contractor shall not be responsible to furnish the direct protection of the work of Massport or other contractors.

B. The Tenant's contractor shall give all notices and comply with all applicable laws, ordinances, codes, rules, regulations, and lawful orders of Massport's insurer and any public authority bearing on the safety of property or its protection from damage, injury, or loss, and further, shall cooperate and keep the Tenant, Massport and other contractors informed of all of the Tenant contractor's precautions for the protection of the work.

C. The Tenant's contractor shall be solely responsible for the design, installation and maintenance of all temporary structures such as, but without limitation, all necessary bracing, framing, and structures or structural elements to prevent the failure of materials or temporary facilities required in the execution of its work which could result in damage to property or the injury or death of persons.

D. If any of the Tenant contractor's operations destroy or damage any real or personal property, public or private, the Tenant's contractor shall promptly repair or replace such property. Occupancy of the work area will not be approved until such repairs have been completed to Massport's satisfaction.

7.9 Protection of Municipal and Public Service Systems

A. Before the work is begun, the Tenant's contractor shall communicate with all governmental agencies and private entities having jurisdiction over municipal or other public service systems that might be affected by the work.

B. After the work is begun, the Tenant's contractor shall perform in a manner designed to reduce to a minimum the potential for disrupting the operations of service systems. In particular, when a Massport, municipal, or other public service system could be affected by Tenant Alterations or utilities service extensions executed by the Tenant's contractor, the Tenant's contractor is required to contact the agency responsible for the operation of that affected system for instructions on how best to proceed.

7.10 Protection of Streets and Roads

Traffic control systems (such as street signs, traffic signals, traffic lane markings, and any other equipment or facilities that aid in the control of traffic) shall be protected, and the Tenant shall be liable for any damages to these systems or any damages to persons and properties that may result from failures in the traffic control system that were caused by the Tenant or its contractor(s).

7.11 Protection of Drainage Ways

A. The Tenant and its contractor shall not bypass untreated or partially treated waste waters or waste materials to storm sewers or other drainage courses.

B. All bypassing or pumping of sanitary sewerage required during construction shall be to other sanitary sewer facilities approved by Massport.

C. All existing sewer facilities shall remain in continuous and full operation during construction.

D. Dewatering activity shall be conducted in accordance with DEP and EPA regulations and the requirements of Massport Environmental. Use of environmental controls when dewatering, or performing site work, is required for all impacted storm drains.

7.12 Fire Protection / Safety Procedures

It is the overall responsibility of Tenant's contractor to establish, develop and implement an appropriate fire safety program to prevent and minimize fire damage during Tenant Alterations. The following guideline, established by Massport's Fire Marshal's Office, shall be complied with at all times by all contractors and subcontractors working at Massport properties. It is intended to be only a guideline and is not inclusive of all code requirements governing construction activities and operations.

A. Regulatory Compliance and Building Permits

1. All construction, alteration and demolition work shall be accomplished in full compliance with all applicable provisions and requirements of the State Building Code, State Fire Prevention Regulations, and all applicable National Fire Protection Association Codes and Standards, particularly NFPA 241, "Standard for Safeguarding Construction, Alteration and Demolition Operations", and all OSHA Standards and Regulations governing construction activities and worker safety.

2. No work is to take place until the State Building Permit has been issued by the State Building Inspector.

B. Fire Prevention

Good fire prevention practices shall be observed on all construction sites. No smoking rules shall be enforced, storage area shall be kept neat and orderly, and trash emptied once a day or more frequently if needed.

C. Paid Fire Department Details

1. Paid fire department watch details may be required by Massport's Fire Marshal's Office or designee in the case of fire protection-life safety system impairments (including out-of-service fire alarm systems, automatic sprinkler systems, fire pumps, fire mains, etc.), certain phases of hotwork involving welding and/or torch burning that is deemed hazardous and/or which may result in a fire, or if the Tenant or its contractor has failed to comply with permit requirements. The cost for paid fire department details shall be borne by the Tenant or the Tenant's contractor.

2. Impairment of any sprinkler and/or fire alarm system in excess of 4 hours in any 24-hour period in any facility occupied in part or in whole by any non-construction personnel shall require the presence of a paid fire rescue detail at the contractor's sole expense along with the required impairment permit. No hot work is ever allowed in any sprinkler protected space or facility if the sprinkler protection is impaired for any reason.

D. Maintenance of Exits

All exits within or adjacent to construction areas are to be maintained free and clear of any and all obstructions that may restrict access and exiting.

E. Fire Extinguishers

Fire extinguishers shall be readily available throughout the entire construction area. The type of fire extinguisher required (A, B, C) shall be indicated in the contract documents. "BC" only fire extinguishers are to be used on apron, taxiways, or runways at all airports. Fire extinguishers are to be properly maintained and inspected, and be readily visible. Travel distance to an extinguisher from any point in the construction area shall not exceed 75 feet. To verify its serviceability, an extinguisher shall be equipped with a valid Inspection Data Tag indicating its last date of inspection, as well as the inspection firm's certificate of registration number as issued by the Massachusetts State Fire Marshal's Office.

F. No Open Burning / Open Flames

No open burning is permitted at any construction site on Massport's property. No open flames from construction-related equipment such as a tar kettle, torches, salamanders, smudge pots, or like devices, will be allowed unless permits for same are issued by Massport's Fire Marshal's Office.

G. Explosives

The use of explosives is prohibited at any construction site on Massport's property, unless properly permitted and permission is obtained by Massport's Fire Marshal's Office.

H. Construction Barricades / Barriers

All construction-related barriers/barricades within a building area shall be constructed of non-combustible, fire–retardant material. Massport will work with the Tenant to produce site signage for barricades. Barricades shall be secured properly so as not to create a hazard. When barricade is outside a building area Emergency Vehicle Access road of 20 feet wide and 13.5 feet tall must be maintained at all times.

I. Unprotected Openings

All horizontal floor and/or roof openings are to be properly covered at all times. Under no circumstances will any type of shaft, roof or duct opening be left unprotected. Fire walls and fire rated construction assemblies shall remain in service as long as possible to prevent unwarranted fire spread. No fire doors are to be left open or blocked open in any manner at any time during any phase of construction.

J. Trash Chutes

Trash chutes, when authorized, shall be constructed of non-combustible material and be erected on the exterior of the building. Trash chutes shall not enter into a building and shall empty directly into an exterior dumpster. Trash chute openings shall be secured at the end of the day with a protective cover that will stop the spread of fire into the building via the chute.

K. Construction Dumpsters

Construction dumpsters shall be located at as great a distance as possible from adjacent building areas, particularly away from any windows, doors or roof overhang areas. Dumpsters are not to block fire lanes, fire hydrants, fire department sprinkler connections, exterior exit doors, fire escapes, etc. Trash will not be permitted to accumulate on or around the exterior of a dumpster. Dumpsters are to be kept closed or covered at all times, and shall be labeled with the project name and 24-hour contact information. Dumpsters shall be emptied when full, and prior to major weather events (e.g., heavy wind, snow, etc.). Dumpster locations shall be approved by Massport.

L. Electrical Work

All electrical work (both temporary and permanent) within the construction area shall be accomplished in full compliance with all applicable Massachusetts Electrical Code requirements. Electrical extension cords shall be suitable for their intended use, and if necessary, be approved for outdoor use. Equipment requiring ground faults for use outdoors or in damp atmospheres shall be properly maintained. Electric panel covers are to be replaced at the end of each day so as not to leave unprotected open panels. Electrical appliances, tools and equipment shall be disconnected when not in use. All construction of related wiring and equipment for lighting, heat or power shall be in accordance with applicable codes.

M. Welding and Torch Burning

All welding, torch burning and cutting processes shall be conducted in full compliance with Massachusetts State Fire Prevention Regulations 527 CMR 1.00 Chapter 41 which addresses welding and cutting processes. No hotwork (welding, torch burning, etc.) is permitted unless permits authorizing such work are issued by Massport's Fire Marshal's Office. (Application for permit may be obtained from the Fire Prevention Office of Massport's Fire Rescue Department).

It is the responsibility of the Tenant's contractor to fully understand all requirements of 527 CMR 1.00 Chapter 41.

N. Storage of Flammable Liquids

Storage of flammable liquids is prohibited within building areas at all construction sites unless a permit for same is issued by Massport's Fire Marshal's Office. Storage will not be permitted in places of public assembly. Storage, if permitted by the Fire Marshal's Office, shall be in U.L. approved containers stored within a U.L. approved flammable liquid cabinet.

O. Outside Storage

Outside storage and staging equipment shall not block fire lanes, fire hydrants, fire department sprinkler connections, exterior exit doors, or access to emergency equipment. All items shall be secured to prevent foreign object debris or damage.

P. Fire Hydrants

Fire hydrants are to be kept clear and accessible at all times. No parking is permitted within a 20-foot diameter of a hydrant. Fire hydrant use by Tenant's contractor(s) is strictly prohibited unless permission for use is authorized by the Fire Marshal's Office and the Massport Facilities Department.

Q. Fire Lanes

Emergency Vehicle Access lanes 20' high and 13.5' high to and from all building areas are to be established and kept clear at all times. Fire lanes are not to be blocked by vehicles, storage dumpsters, or other equipment. Surface travel areas within a designated fire lane shall be capable of supporting and withstanding live loads of responding fire apparatus in all weather conditions. In addition, fire lanes shall be kept free of snow and ice accumulation in the winter months. Only airport-approved chemicals may be used to treat the pavement on the ramp in any aircraft apron area.

R. Excavation

Prior to any excavation work, the Tenant's contractor shall contact the Capital Programs Department regarding utility distribution systems and acceptable excavation methods. In addition, established Massachusetts Dig Safe procedures and requirements, and trench permit requirements if excavation is 3 ft. or greater, shall be complied with in full (see requirements in Section 7.3 and Section 7.4).

S. Temporary Heat

Use of any temporary heating units exhibiting an open flame or any type of glowing element will require a permit issued by the Fire Marshal's Office. Only temporary heating units that have been approved by the office of the Massachusetts State Fire Marshal will be considered for use.

T. Fencing / Security

Building areas under construction shall be secured at all times to prevent unauthorized access. If necessary, a Massport "Restricted Access" sign will be provided to be posted at all access points to the site. Watchman/guard services may be required depending upon the hazards involved.

U. Compressed Gases and Liquids

No compressed gases or liquids are to be stored on site unless permits for same are issued by Massport's Fire Marshal's Office. The storage of flammable gases or liquids within buildings is prohibited.

V. Spray Painting / Painting

Spray painting with flammable liquids, solvents, thinners, etc. is prohibited unless permits for same are issued by the Massport's Fire Marshal's Office. In addition to the above, paints and other associated products such as solvents, thinners, urethanes, etc. are not to be left in open containers. Covers shall be replaced to ensure containers are properly sealed. No oily rags and/or rags contaminated with paint products are allowed to accumulate at the work site unless they are stored in approved self-closing metal containers.

W. Trash / Debris Removal

All trash, debris and all other waste material shall be removed from all building areas once a day or more frequently if needed. Trash and debris will not be permitted to accumulate in any building area.

X. Canvas / Tarpaulins

All canvas and tarpaulins used to enclose either interior and/or exterior building areas shall be U.L. Listed Fire Resistant Material with flame spread rating of 15 or less. Tarpaulins shall be properly secured at all times.

Y. Tar Kettles

A Massport's Fire Marshal's Office permit is required for the use and operation of any type of asphalt and/or tar kettle. Tar kettle operations shall be conducted in safe locations as determined by the Massport's Fire Marshal's Office.

Z. Construction Trailers and Tool Sheds

Construction trailers and tool sheds, when used, shall conform to State Building Code requirements. Heating and electrical systems are to be properly maintained. Exits are to be kept clear, and fire extinguishers shall be available. Construction trailers are not to be positioned and/or located so as to unnecessarily expose existing building area to fire exposure hazards. Location of construction trailers shall be approved as part of the larger project through the TAA process. Sprinkler protection may be required within construction trailers depending on the length of construction activity. Massport's Fire Marshal's Office will determine protection requirements during TAA process review.

7.13 Warranties and Correction of Work

A. The Tenant shall ensure that all parts, materials, components, fixtures, furnishings, equipment, finishes and other items used to perform the work shall be new (unless otherwise specified in the Tenant's approved specifications) and suitable for the purpose used; and further, are of good quality, free from faults and defects, and in conformance with the approved construction contract documents. Work not conforming to these requirements, including substitutions not properly approved and authorized by the Tenant, its representatives, or Massport, may be considered defective. The Tenant's contractor shall, when requested by the Capital Programs Department through the Tenant, furnish Massport with submittals or other satisfactory evidence as to the kind of materials, fixtures, furnishings and equipment planned to be installed, or which have been installed. The Tenant shall ensure that the construction procedures and methods employed by its contractor to perform the work shall have in the past proven to be suitable for the results expected. If the Tenant's contractor proposes to use an unproven and untried method, process or product, the Capital Programs Department shall be advised of that proposal, in writing. Massport reserves the right, in its sole discretion, to approve or disapprove or to require special guarantees to cover, the work produced by any such new and untried process, method or product.

B. Except as provided in the General Terms and Conditions (Section 3.1), title to all fixed equipment, systems, components, exhaust hoods and other fixed items ("fixed equipment") shall immediately upon installation vest in Massport without execution of any further instrument. Title to all such fixed equipment shall be transferred to Massport free and clear from all security interests, liens, or encumbrances whatsoever. Tenant's warranty for such items shall pass and be assigned to Massport at the date of substantial completion.

C. The Tenant shall ensure that its contractor will promptly repair, replace or otherwise correct any of its workmanship and any parts, materials, furnishings, fixtures, finishes, components, equipment or other items in the work which contain faults or defects or which otherwise fail to comply with the warranties set forth in this section, as determined or as identified by the State Building Inspector, Massport, Tenant's architect or engineer, or Tenant's contractor, whether observed and/or reported before or after substantial completion.

D. Should the scope of work require access to and work on or through an existing roof, the Tenant shall ensure that it's contractor hire and direct roof maintenance and repair using a roofing contractor qualified by the manufacturer of the roof system. For roof installations currently under warranty, the Tenant shall be responsible for meeting the conditions of the warranty and having the manufacturer inspect and re-warrant the system.

7.14 Performance during Warranty Period

A. Massport's Capital Programs Department will notify the Tenant of work which it finds does not satisfy the warranties described above, and the Tenant's contractor shall, within the time set forth in such a notice, begin to repair, replace or otherwise correct the defective work. If the Tenant's contractor fails to begin such work within such time period, Massport may make the repairs or replacements at the expense of the Tenant. If Massport determines that immediate action to make repairs, replacements or other corrections is necessary because of emergency conditions

or to prevent further loss or damage, Massport may proceed without notice to the Tenant's contractor and such remedial work by Massport shall be at the Tenant's expense.

B. If the Tenant's contractor or Tenant does not agree with a determination of the Capital Programs Department concerning defective work, the Tenant's contractor or Tenant may dispute in writing, Massport's determination and shall provide a detailed explanation of such position.

C. Should Massport claim by written communication to Tenant's contractor or Tenant before the warranty periods expire determine that Tenant's contractor or Tenant's position regarding defective work is without merit, or that certain defective work exists and that it requires repair or replacement, the warranty period shall be automatically extended for as long as the defective work exists.

General Aviation Terminal

(End of Section)

Appendix A – TAA Form

Massachusetts Port Authority
TENANT ALTERATION APPLICATION DEPOSIT FORM

2016

Information and Instructions

A deposit is required for all qualifying tenant alteration work.
The Deposit Form and payment must accompany the submittal of the Tenant Alteration Application to Massport's Capital Programs Department, 1 Harborside Drive Suite 200S, East Boston, MA 02128, or be provided prior to the issuance of the Massport Approval of Tenant Alteration or other project approval.

Please submit the following:
- A W-9 form (tax ID) for the entity submitting the payment, which may be the tenant, the architect or the contractor.

Note: The check will be returned ONLY to the entity which submitted the original payment.
- This form with the information section, below, fully completed.
- Payment. Deposits may be paid online at massport.com/quickpay OR by enclosing a check with this form made payable to Massachusetts Port Authority. Deposits shall be maintained by Massport in a non-segregated non-interesting bearing account.

Deposit Schedule

ESTIMATED TOTAL PROJECT COST	DEPOSIT AMOUNT
$20,000 or less	No deposit required
$20,000 - $49,999	$2,500
$50,000 - $99,999	$5,000
$100,000 - $249,999	$10,000
$250,000 - $499,999	$15,000
$500,000 - $999,999	$20,000
$1,000,000 and over	$20,000 for first million + $10,000 per subsequent million. $50,000 MAXIMUM

Return of Deposit to Applicant

Deposit will be returned by mail to the Applicant at the time that the project is 1) successfully concluded OR 2) withdrawn by the Applicant OR 3) disapproved by Massport. See the *Guide to Tenant Construction* for information on Massport's requirements for project closeout and record documentation, or contact Tenant Construction Office, Massachusetts Port Authority, 1 Harborside Drive Suite 200S, East Boston, MA 02128, or call (617) 561-1851.

The Applicant must provide complete and accurate record documentation in accordance with the Tenant CAD standard within 90 days of project completion (defined as, alternately, substantial completion or issuance of certificate of occupancy, or as agreed). If the Applicant fails to provide this information within the 90-day time frame, the deposit shall be retained by Massport. Massport reserves the right to withhold approval of future Tenant Alteration Application requests by the Applicant until such record documentation for past projects is provided.

APPLICANT INFORMATION SECTION

to be completed by applicant; please type.

Applicant (Company Name)	
Project Title	
Estimated Project Cost	
Deposit Amount Submitted	
Contact information for return of depo Name, Address, Phone and e-mail	

TENANT ALTERATIONS – Tenant Work Plan

Work Plan Number _____

Tenant Name	
Project Name	
General Contractor	

A. Scope of Work:

B. Date & Shift of Work:

C. Schedule & Sequence of Operations:

D. Operational Impact:

E. Work Performed By:

F. Relevant Attachments:

Prepared by: _____ *Email:* _____

Appendix B – TAA BIM & VDC Guide

Preface

Massport appreciates the investment made by tenants in its facilities, and is committed to doing everything possible to support the investment of our tenant partners in the built environment we share. Tenants are encouraged to establish ongoing communication with Massport staff during their projects' design and construction phases, to help ensure that project information complies with Massport's design and construction criteria and standards. This information supports Massport's goal to create digital information on its facilities and assets.

B-1 Introduction to BIM & VDC Use and Resources

Most architects and engineers use BIM, given the benefits to their practice. If you are reviewing 3D renderings, animations, and 3D construction views, then your designer is probably using BIM software.

For some TAA projects, Massport will require BIM and VDC use. A ***BIM & VDC Project Decision Matrix*** has been developed and included in this document to help you determine whether BIM is required, recommended, or unnecessary on your project.

The Design Technologies Integration Group (DTIG) is responsible for all BIM, CAD templates, submittal standards, legacy data and related information use for projects at Massport. Members in this group are in charge of all BIM, GIS, Site & Civil utilities, Asset Management, and are available to answer questions concerning BIM use for Massport Projects.

If BIM is required on your TAA project, there is help from Massport through the DTIG and the Tenant Alteration representative for the project. The design team hired shall contact DTIG regarding project, BIM templates and submittal requirements prior to any official design submissions. DTIG can be contacted at DTIG@Massport.com. Tenant Alteration representative can be contacted at TAA@massport.com.

B2 The TAA BIM/VDC Project Decision Matrix

Full TAA projects may require BIM. Massport has developed a BIM/VDC Project Decision Matrix included in Appendix B which includes project types, definition, registration, TAA, deposit requirements, and BIM use.

Also to be considered are the two (2) main lease types that TAA projects are categorized under, which are Direct Leases and 3rd Party Leases. Included is a Project Decision Matrix for either type.

- Figure B1: Direct Tenant TAA Projects: BIM/VDC Project Decision Matrix and its associated BIMxP template.

- Figure B2: Third Party Development Properties: BIM/VDC Project Decision Matrix and its associated BIMxP template.

Both BIMxP templates of these can be found in Appendices B1 & B2.

Other factors considered when determining if a project should be developed in BIM include:

- Internal projects of sufficient complexity as to impact building systems, specifically mechanical, plumbing, and electrical and lighting systems
- Visual impact of the space on the facility and surrounding spaces – commercial, food, and retail spaces conveying the Massport aesthetic goals for the traveler experience
- Projects which impact security and passenger flow
- Extensive rework of existing spaces – internal and external shell modifications

If there is a question concerning BIM and VDC use, it is recommended that you consult with the DTIG team member(s) and your design team to determine BIM value and requirements for your review and submission process.

Figure B1: Project Decision Matrix – Direct Tenant TAA Projects

See: BIMxP Template - Direct Tenant TAA Projects (see Appendix B1)

BIM/VDC Project Decision Matrix - Direct Tenant TAA Projects			
Massport reserves the right to modify the following guidelines as deemed necessary by project circumstances			
Type	**Description**	**BIM Requirement**	**Notes and Assumptions**
Building Alteration (Work Done to Existing Buildings)			
Exterior alterations to building	Roof replacement; new wall panels; new or replacement windows; canopies, awnings or other new building elements	Yes	BIM if there is significant change to the building exterior. BIM Uses: • Existing Conditions Model • New Building Elements
Interior alterations to building	Interior fit-outs which may include repartitioning, installation or renovation of MEP (mechanical, electrical, plumbing) systems, structural changes, finishes and furniture or other components.	Yes BIMxP Record Model	BIM for MEP - Specifically mechanical, plumbing, electrical and fire protection - to capture major building systems and connection points to the existing building systems.
Equipment and Systems			
Installation of new standalone systems	Electrical, mechanical, plumbing/gas, HVAC, telecommunications, security, fueling or other complete systems or individual components OR replacement of individual components of the above systems	Yes	BIM for complete system redesign and changes. No BIM for equipment replacement.
New Construction			
New Buildings	All Single or Multi-phased	Yes BIMxP Record Model	BIM for: • Architectural • Building Systems • Utilities and Connections
Horizontal, Civil			
All Horizontal and Site Utility Replacement	Parking lots/paving; site grading; sidewalks; site utilities; maritime-repairs to docks and piling; Aprons	Yes	Civil 3D and 3D utility information is required, and must be in State Plane Coordinates (NAD 83) and modeled to show an accurate "Z" coordinate for underground utilities and surface features.
Other			
Building demolition, total or partial	Any	No	
Temporary Structures	Including modular buildings, but not including construction trailers	No	
Signage	Ground-mounted identity signs; Building-mounted identity signs; wayfinding signs or sign systems (blade or flat-mounted, powered or not powered)	No	

Figure B2: Project Decision Matrix – Third Party Development Properties

See: BIMxP Template - Third Party Development Properties (see Appendix B2)

BIM/VDC Project Decision Matrix - Third Party Development Properties			
Massport reserves the right to modify the following guidelines as deemed necessary by project circumstances			
Type	**Description**	**BIM Requirement**	**Notes and Assumptions**
Building Alteration (Work Done to Existing Buildings)			
Small Repairs and Replacements	Architectural and finish repair/replace	No	
Roof Repairs and Replacements	Roof work	No	
Exterior Alterations to Building	Wall panels; new windows locations; canopies, awnings or other new building elements	Yes	BIM if there is significant change to the building exterior. BIM Uses: • Existing Conditions Model • New Building Elements
Interior Fit outs	**Simple**: Interior fit-outs involving re-partitioning and minor MEP work in finished space; office renovations that do not significantly alter the base building structural elements.	No	BIM for MEP – Specifically
	Complex: Interior fit-outs in raw space or fit-outs that require new and/or extensive renovation of MEP (mechanical, electrical, plumbing) or changes to the building structure would require a full TAA.	Yes BIMxP Record Model	BIM for MEP - Specifically mechanical, plumbing, electrical and fire protection - to capture major building systems and connection points to the existing building systems.
Equipment and Systems			
New Installation or Significant Modifications	Electrical, mechanical, plumbing/gas, HVAC, telecommunications, fueling or other complete systems or individual components	Yes	BIM for complete system redesign and changes. No BIM for equipment replacement.
Replacement or Minor Modifications	Replacement of individual components of above systems, or components or systems with minimal impact to the facility	No	
New Construction			
New Buildings	All Single or Multi-phased	Yes BIMxP Record Model	BIM for: • Architectural • Building Systems • Utilities and Connections
Horizontal, Civil			
Parking lots/paving; site grading; sidewalks; site utilities; maritime-repairs to docks and piling	Parking lots/paving; site grading; sidewalks; site utilities; maritime-repairs to docks and piling; Aprons	Yes	Civil 3D and 3D utility information is required, and must be in State Plane Coordinates (NAD 83) and modeled to show an accurate "Z" coordinate for underground utilities and surface features.
Signs			
Identity	Ground-mounted identity signs; Building-mounted identity signs; wayfinding or other functional signs (blade or flat-mounted), powered signs	Yes	As Part of an associated BIM Project, otherwise No
Others	1) Wayfinding or other functional signs or sign systems; 2) New construction identity signs that are part of the base building review.	Yes	As Part of an associated BIM Project, otherwise No
Other			
Demolition, Total or Partial	Any	No	
Temporary Structures	Including modular buildings, but not including construction trailers	No	

Notes:

(1) Projects that do not require a TAA will be registered using the Project Registration Process protocol. Registered projects must provide information including applicant name, architect name, contractor name, start and end dates, and description of the work. Copies of all jurisdictional permits which are legally required for the project must be submitted to Massport for record throughout the course of the project, and evidence of final signoff from the jurisdictional authorities must be provided at completion of the project.

(2) Projects that require a TAA will submit project data on the standard Tenant Alteration Application (TAA) form and provide a deposit as noted above; plans proceed through normal TAA process, including the issuance of a Massport Permit for Tenant Alteration.

(3) Record Document Deposits are collected for certain projects in order to assure the submittal of as-built documentation at the close of the project. If your project requires a deposit, contact the Manager of Tenant Alterations at jrevill@massport.com to obtain the deposit form and directive.

B3 BIM & VDC on Projects

Building Information Modeling (BIM) and Virtual Design and Construction (VDC) are processes allowing teams to work in a collaborative manner on a digital or virtual model of the project. To facilitate this collaboration, basic information is required and documented for team and Massport use. This information is documented utilizing industry standards and forms developed by Massport.

B3.1 BIM Authoring Software

Massport's BIM Authoring tool is Autodesk Revit. Review the Massport resource page for Revit templates and the current version of Revit being used by Massport. Autodesk Civil 3D and AutoCAD are also used as the authoring tools for any site / civil and survey projects.

B3.2 Massport Existing Conditions Documentation

Massport may provide existing documentation (Revit models, CAD files, PDF drawings) appropriate for the project location. This information shall be verified by the tenant prior to any design or construction.

B3.3 Massport BIM Execution Plan

Massport's ***BIM Execution Plan*** (**BIMxP**) was developed to standardize project data requirements and reporting on BIM projects. There are two (2) BIMxP templates developed for TAA projects:

- Appendix B1 - Direct Tenant TAA Projects
- Appendix B2 - Third Party Development Properties

The spreadsheet contains:

- Project Information – Responsible Parties Abbreviations
- Record Model Documentation - identifies the responsible party/company (R/P) of a design element and the level of development (LOD) for that element, per the MPA LOD guidelines (See Section B4 for LOD definitions)

B3.4 Record Models and Trade As-Built Deliverables

The Revit (.rvt) model is considered a deliverable on BIM projects. All linked and associated models and any other file types used in project creation must be submitted along with the central model, and must be clearly named according to the MPA BIM Guidelines. Also, if laser scanning has been performed, associated point clouds must be submitted in a registered format, preferably Autodesk ReCap design or construction.

B3.5 Record Drawings

PDF of record drawings shall be submitted. Refer to section B5.1 for PDF submittal standards.

B3.6 Equipment Information

The following information is submitted for projects with new equipment for utilities, and major building systems

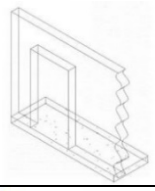
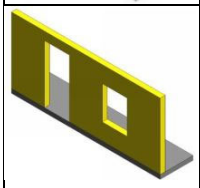
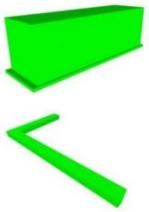
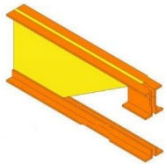
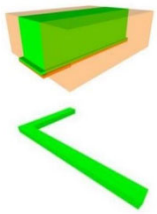
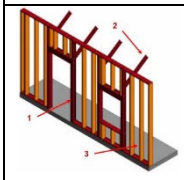
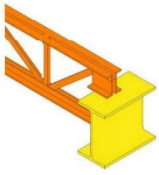
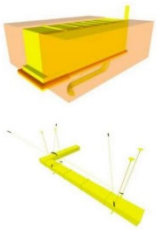
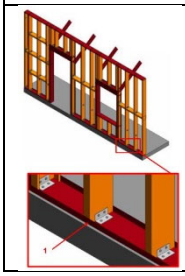
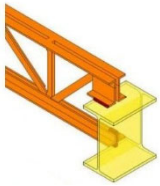
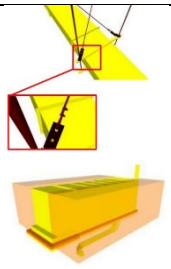
- Manufacturer of equipment
- Model and Serial Number
- Location - Actual room or location the asset resides

B4 BIM Model and Drawing Standards

BIM uses a set of industry standards to identify the level of graphic and information development required on a project. This standard, developed through the BIMFORUM, is called Level of Development Specification Part I (LOD). A copy of the latest BIMFORUM LOD Specification is available on the BIMFORUM website: http://bimforum.org/lod/

FUNDAMENTAL LOD DEFINITIONS

BIMFORUM Revision: December 2021

Architectural	Structural	MEP/FP	
		No Model	**LOD 100** The Model Element may be graphically represented in the Model with a symbol or other generic representation, but does not satisfy the requirements for LOD 200. Information related to the Model Element (i.e. cost per square foot, tonnage of HVAC, etc.) can be derived from other Model Elements.
			**LOD 200** The Model Element is graphically represented within the Model as a generic system, object, or assembly with approximate quantities, size, shape, location, and orientation. Non-graphic information may also be attached to the Model Element.
			**LOD 300** The Model Element is graphically represented within the Model as a specific system, object or assembly in terms of quantity, size, shape, location, and orientation. Non-graphic information may also be attached to the Model Element.
			**LOD 350** The Model Element is graphically represented within the Model as a specific system, object, or assembly in terms of quantity, size, shape, location, orientation, and interfaces with other building systems. Non-graphic information may also be attached to the Model Element.
			**LOD 400** The Model Element is graphically represented within the Model as a specific system, object or assembly in terms of size, shape, location, quantity, and orientation with detailing, fabrication, assembly, and installation information. Non-graphic information may also be attached to the Model Element.

B5 Project Review Models

B5.1 TAA Model and PDF Submittal Guidelines:

The electronic files will be reviewed to verify that all the files meet Massport guidelines.
All Design/Record drawings that are not in compliance with these standards will be returned and resubmitted by the Tenant.

- Design Phase Submittal - Revit models, and individual PDF sheet files in their latest format.
- Record Files Submittal - Revit models, and individual PDF sheet files in their latest format.
- All record drawings require both a signature and stamp.
- File naming format for Revit file submissions: TAAXXXX_ARCH_RXX.rvt, TAAXXXX_MEP_RXX.rvt, TAAXXXX_STRUC_RXX.rvt, where TAAXXXX is the TAA number, ARCH/MEP/STRUC etc. is the discipline, and RXX is the Revit version year. NOTE: This is for official submittals only. Initial (design) TAAs will not yet have the TAA number assigned. Therefore it is strongly urged that the design team obtain the official TAA number from the Tenant Alteration Manager in Capital Programs prior to file creation and/or official submittals to Capital Programs.
- All PDF files will be prepared at 300 DPI.
- All PDF submissions: PDF files of the construction documents / sheets within the model shall be submitted as individual files per sheet. PDF files must follow the MPA naming convention for internal archiving purposes and shall be named as follows: TAAXXXX-A101.pdf, and orientated to landscape. Ensure to have the proper TAA number prior to submission.

B5.2 Initiating Projects with Massport

When initiating a BIM project with Massport, the project team should obtain the required submittal standards from the TAA Manager. BIM and related VDC technology is constantly changing and evolving. Be sure to always obtain the latest standards, families, and shared parameters at the start of each project from the MPA TAA Manager.

- Revit Version: When requesting the Revit models, please specify the version of Revit being used. MPA currently runs the latest version along with two (2) previous versions to help with flexibility.
- Families: Along with the Revit files, there will also be MPA Revit families for standard symbols and sheets.
- Shared Parameters: Shared parameters will also be included with the template package.
- Legibility: Drawings must be clear and legible.

B5.2.1 Site / Civil Project Submissions

Massport uses Autodesk Civil 3D for all site/civil and underground utility projects. The information taken from these submissions will be utilized for the MPA GIS program. To ensure proper submission of the site/civil work, the TAA Manager will supply the consultant with the MPA Site Civil base file containing the MPA GIS layering standards. These layering standards and geospatial location (NAD83) must be followed for incorporation into Massport's compiled utility base maps for our various campuses..

B5.3 As-Bid / Design BIM Deliverables

Final 100% Design BIM Submittal
The following submissions are to be delivered to the Authority via physical media:

- BIMxP
- As-Designed Revit Architectural Model – centralized
- As-Designed Revit MEP/FP and Structural models
- Navisworks Files and associated clash reports (if available)
- Individual PDF files of the Construction Documents
- 2D AutoCAD files, exported from Revit, of blank floor plans
- Civil 3D files of all site, civil, and underground utility drawings

B5.4 Final Record BIM Deliverables

Final 100% Record BIM Submittal
The following submissions are to be delivered to the Authority via physical media:

- BIMxP
- Record Models shall be developed in accordance with the decision matrix type, (see Figure B1 Direct Tenant Matrix, or Figure B2 Third Party Matrix) and shall match the category type on the appropriate BIMxP, (see Appendix B1 Direct Tenant Matrix, or Appendix B2 Third Party Matrix) along with the required LOD
- Record As-Built point cloud files, registered, rotated and elevated (if available)
- Record Federated Navisworks Model (if available)
- Trade Contractor / Sub Contractor Native Files (if available)
- Individual PDF files of the Construction Documents. Refer back to section 5.1 in this guide for PDF submittal standards and file naming.

Please contact MPA DTIG (Design Technologies Integration Group) for Revit and/or CAD templates by email: DTIG@massport.com

	Element Classification	Building Alteration (Work Done to Existing Buildings)		Equipment and Systems	New Construction	Horizontal, Civil	Other			Direct Tenant TAA Projects
	Element Name	Exterior Alterations	Interior Alterations to Building	Installation of new Standalone Systems	New Buildings	All Horizontal and Site Utility Replacement	Building Demolition, Total or Partial	Temporary Structures	Signage	Notes for LOD Requirements
Site/Civil	A									
	Site Improvements	Use Pull Down Menu for LOD.								Use MPA Civil 3D Template and Standards for Sitework - Provide "Z" Coordinate for Utilities
	Roadways	200	200	N/A	300	300	N/A	N/A	N/A	MPA Civil 3D Template File
	Parking Lots	200	200	N/A	300	300	N/A	N/A	N/A	MPA Civil 3D Template File
	Pedestrian Plazas and Walkways	200	200	N/A	300	300	N/A	N/A	N/A	MPA Civil 3D Template File
	Airfields	200	200	N/A	300	300	N/A	N/A	N/A	MPA Civil 3D Template File
	Athletic, Recreational, and Playfield Areas	200	200	N/A	300	300	N/A	N/A	N/A	MPA Civil 3D Template File
	Site Development	200	200	N/A	300	300	N/A	N/A	N/A	MPA Civil 3D Template File
	Landscaping	200	200	N/A	300	300	N/A	N/A	N/A	MPA Civil 3D Template File
	Liquid and Gas Site Utilities									
	Water Utilities	200	300	N/A	300	300	N/A	N/A	N/A	Interior Projects- Link to Utilities
	Sanitary Sewerage Utilities	200	300	N/A	300	300	N/A	N/A	N/A	Provide hook-up location to existing utility lines. Provide "z" coordinate for utilities. MPA Civil 3D template file
	Storm Drainage Utilities	200	300	N/A	300	300	N/A	N/A	N/A	
	Site Energy Distribution	200	300	N/A	300	300	N/A	N/A	N/A	
	Site Fuel Distribution	200	300	N/A	300	300	N/A	N/A	N/A	
	Liquid and Gas Site Utilities Supplementary Components	200	300	N/A	300	300	N/A	N/A	N/A	
	Electrical Site Improvements									
	Site Electric Distribution Systems	200	300	N/A	300	300	N/A	N/A	N/A	Equipment shall be identified
	Site Lighting	200	300	N/A	300	300	N/A	N/A	N/A	Equipment shall be identified
	Site Communications									
	Site Communications Systems	200	300	N/A	300	300	N/A	N/A	N/A	
	Miscellaneous Site Const									
	Tunnels	200	300	N/A	300	300	N/A	N/A	N/A	
	Subgrade Enclosures									
	Walls for Subgrade Enclosures	300	300	N/A	300	300	N/A	N/A	N/A	
	Slabs-on-Grade									
	Slabs	300	300	N/A	300	300	N/A	N/A	N/A	
Superstructure/Envelope	B									
	Superstructure									
	Floor Construction	300	300	N/A	300	N/A	N/A	N/A	N/A	Provide accurate geometry to the highest level created for project. For new construction Massport requires the exterior shell. Interior information on major equipment location and type required for rescue services.
	Roof Construction	300	300	N/A	300	N/A	N/A	N/A	N/A	
	Structural Framing	300	300	N/A	300	N/A	N/A	N/A	N/A	
	Structural Columns	300	300	N/A	300	N/A	N/A	N/A	N/A	
	Exterior Vertical Enclosures									
	Exterior Walls	300	300	N/A	300	N/A	N/A	N/A	N/A	Provide accurate geometry to the highest level created for project. For new construction Massport requires the exterior shell. Interior information on major equipment location and type required for rescue services.
	Exterior Windows	300	300	N/A	300	N/A	N/A	N/A	N/A	
	Exterior Doors	300	300	N/A	300	N/A	N/A	N/A	N/A	
	Exterior Louvers	300	300	N/A	300	N/A	N/A	N/A	N/A	
Interiors	C Internal to MPA Facilities									
	Interior Construction									
	Interior Partitions	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Interior Windows	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Interior Doors	N/A	300	N/A	300	N/A	N/A	N/A	N/A	Secure/Not secure
	Interior Grilles	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Raised Floor Construction	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Suspended Ceiling Construction	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Interior Finishes									
	Wall Finishes	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Flooring	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Stair Finishes	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Ceiling Finishes	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Interior Finish Schedules	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
MEP/FP & Equipment	D									
	Conveying									
	Vertical Conveying Systems	N/A	300	N/A	300	N/A	N/A	N/A	N/A	Provide Shop Drawings
	Horizontal Conveying Systems	N/A	300	N/A	300	N/A	N/A	N/A	N/A	Provide Shop Drawings
	Material Handling	N/A	300	N/A	300	N/A	N/A	N/A	N/A	Provide Shop Drawings
	Plumbing									
	Domestic Water Distribution	N/A	300	N/A	350	N/A	N/A	N/A	N/A	Provide hook-up location to existing utility lines. Provide "z" coordinate for utilities. MPA AutoCAD template file or .rvt model file
	Sanitary Drainage	N/A	300	N/A	350	N/A	N/A	N/A	N/A	
	Building Support Plumbing	N/A	300	N/A	350	N/A	N/A	N/A	N/A	
	General Service Compressed Air	N/A	300	N/A	350	N/A	N/A	N/A	N/A	
	Process Support Plumbing	N/A	300	N/A	350	N/A	N/A	N/A	N/A	
	HVAC									
	Facility Fuel Systems	N/A	300	N/A	350	N/A	N/A	N/A	N/A	
	Heating Systems	N/A	350	N/A	350	N/A	N/A	N/A	N/A	
	Cooling Systems	N/A	350	N/A	350	N/A	N/A	N/A	N/A	
	Facility HVAC Distribution System	N/A	350	N/A	350	N/A	N/A	N/A	N/A	
	Ventilation	N/A	350	N/A	350	N/A	N/A	N/A	N/A	
	Special Purpose HVAC Systems	N/A	350	N/A	350	N/A	N/A	N/A	N/A	
	Fire Protection									
	Fire Suppression	N/A	300	N/A	350	N/A	N/A	N/A	N/A	
	Fire Protection Specialties	N/A	350	N/A	350	N/A	N/A	N/A	N/A	
	Electrical									
	Facility Power Generation	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Electrical Service and Distribution	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	General Purpose Elec. Power	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Lighting	300	350	N/A	350	N/A	N/A	N/A	N/A	
	Misc. Electrical Systems	N/A	200	N/A	200	N/A	N/A	N/A	N/A	
	Communications									
	Data Communications	N/A	200	N/A	200	N/A	N/A	N/A	N/A	
	Voice Communications	N/A	200	N/A	200	N/A	N/A	N/A	N/A	
	Audio-Video Communication	N/A	200	N/A	200	N/A	N/A	N/A	N/A	
	Distributed Communications and Monitoring	N/A	200	N/A	200	N/A	N/A	N/A	N/A	
	Communications Components	N/A	300	N/A	200	N/A	N/A	N/A	N/A	
	Elect Safety and Security									
	Access Control and Intrusion Detection	300	200	N/A	200	N/A	N/A	N/A	N/A	
	Electronic Surveillance	200	200	N/A	200	N/A	N/A	N/A	N/A	
	Detection and Alarm	300	300	N/A	300	N/A	N/A	N/A	N/A	
	Electronic Monitoring and Control	300	300	N/A	300	N/A	N/A	N/A	N/A	
	Electronic Safety and Security Supplementary Components	300	300	N/A	300	N/A	N/A	N/A	N/A	
	Integrated Automation									
	Integrated Automation Facility Controls	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	E									
	Equipment									
	Vehicle and Pedestrian Equipment	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Commercial Equipment	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Institutional Equipment	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
Furnishings	F									
	Furnishings									
	Fixed Furnishings	N/A	300	N/A	300	N/A	N/A	N/A	N/A	
	Movable Furnishings	N/A	200	N/A	200	N/A	N/A	N/A	N/A	
Specialties	G									
	Special Construction									
	Special Function Construction	200	300	N/A	300	N/A	N/A	N/A	N/A	
	Special Facility Components	200	300	N/A	300	N/A	N/A	N/A	N/A	
	Athletic and Recreational Special Construction	200	200	N/A	200	N/A	N/A	N/A	N/A	
	Special Instrumentation	200	200	N/A	200	N/A	N/A	N/A	N/A	

	Element Classification	Building Alteration (Work Done to Existing Buildings)				Equipment and Systems		New Construction	Horizontal, Civil	Signs		Other		Third Party Development Properties
	Element Name	Small Repairs and Replacements	Roof Repairs and Replacements	Exterior Alterations to Buildings	Interior Fitouts	New Installation or Significant Modifications	Replacement or Minor Modifications	New Buildings	Parking lots / Paving; Site grading; Sidewalks, Site Utilities; Maritime Repairs to Docks and Pilings	Identity	Others	Demolition; Total or Partial	Temporary Structures	Notes for LOD Requirements
Site/Civil	A													
	Site Improvements	Use Pull Down Menu for LOD.												Use MPA Civil 3D Template and Standards for Sitework - Provide "Z" Coordinate for Utilities
	Roadways	N/A	N/A	N/A	N/A	N/A	N/A	300	N/A	200	200	N/A	N/A	MPA Civil 3D Template File
	Parking Lots	N/A	N/A	N/A	N/A	N/A	N/A	300	N/A	200	200	N/A	N/A	MPA Civil 3D Template File
	Pedestrian Plazas and Walkways	N/A	N/A	N/A	N/A	N/A	N/A	300	N/A	200	200	N/A	N/A	MPA Civil 3D Template File
	Airfields	N/A	N/A	N/A	N/A	N/A	N/A	300	200	200	200	N/A	N/A	MPA Civil 3D Template File
	Athletic, Recreational, and Playfield Areas	N/A	N/A	N/A	N/A	N/A	N/A	300	200	200	200	N/A	N/A	MPA Civil 3D Template File
	Site Development	N/A	N/A	N/A	N/A	N/A	N/A	300	200	200	200	N/A	N/A	MPA Civil 3D Template File
	Landscaping	N/A	N/A	N/A	N/A	N/A	N/A	300	200	200	200	N/A	N/A	MPA Civil 3D Template File
	Liquid and Gas Site Utilities													
	Water Utilities	200	300	300	300	300	N/A	300	300	300	300	N/A	N/A	Interior Projects- Link to Utilities
	Sanitary Sewerage Utilities	200	300	300	300	300	N/A	300	300	300	300	N/A	N/A	Provide hook-up location to existing utility lines. Provide "z" coordinate for utilities. MPA Civil 3D template file
	Storm Drainage Utilities	200	N/A	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Site Energy Distribution	200	N/A	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Site Fuel Distribution	200	N/A	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Liquid and Gas Site Utilities Supplementary Components	200	N/A	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Electrical Site Improvements													
	Site Electric Distribution Systems	200	N/A	300	300	300	N/A	300	300	300	300	N/A	N/A	Equipment shall be identified
	Site Lighting	200	N/A	300	300	300	N/A	300	300	300	300	N/A	N/A	Equipment shall be identified
	Site Communications													
	Site Communications Systems	200	N/A	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Miscellaneous Site Const													
	Tunnels	200	N/A	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Subgrade Enclosures													
	Walls for Subgrade Enclosures	300	300	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Slabs-on-Grade													
	Slabs	300	300	300	300	300	N/A	300	300	300	300	N/A	N/A	
Superstructure/Envelope	B													
	Superstructure													
	Floor Construction	300	200	300	300	300	N/A	300	300	300	300	N/A	N/A	Provide accurate geometry to the highest level created for project. For new construction Massport requires the exterior shell. Interior information on major equipment location and type required for rescue services.
	Roof Construction	300	200	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Structural Framing	300	200	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Structural Columns	300	200	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Exterior Vertical Enclosures													
	Exterior Walls	300	200	300	300	300	N/A	300	300	300	300	N/A	N/A	Provide accurate geometry to the highest level created for project. For new construction Massport requires the exterior shell. Interior information on major equipment location and type required for rescue services.
	Exterior Windows	300	200	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Exterior Doors	300	200	300	300	300	N/A	300	300	300	300	N/A	N/A	
	Exterior Louvers	300	200	300	300	300	N/A	300	300	300	300	N/A	N/A	
Interiors	C Internal to MPA Facilities													
	Interior Construction													
	Interior Partitions	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Interior Windows	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Interior Doors	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	Secure/Not secure
	Interior Grilles	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Raised Floor Construction	N/A	200	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Suspended Ceiling Construction	N/A	200	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Interior Finishes													
	Wall Finishes	N/A	300	N/A	300	N/A	300	300	300	300	300	N/A	N/A	
	Flooring	N/A	300	N/A	300	N/A	300	300	300	300	300	N/A	N/A	
	Stair Finishes	N/A	300	N/A	300	N/A	300	300	300	300	300	N/A	N/A	
	Ceiling Finishes	N/A	300	N/A	300	N/A	300	300	300	300	300	N/A	N/A	
	Interior Finish Schedules	N/A	300	N/A	300	N/A	300	300	300	300	300	N/A	N/A	
MEP/FP & Equipment	D													
	Conveying													
	Vertical Conveying Systems	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	Provide Shop Drawings
	Horizontal Conveying Systems	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	Provide Shop Drawings
	Material Handling	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	Provide Shop Drawings
	Plumbing													
	Domestic Water Distribution	N/A	300	300	N/A	300	N/A	350	350	350	350	N/A	N/A	
	Sanitary Drainage	N/A	300	300	N/A	300	N/A	350	350	350	350	N/A	N/A	
	Building Support Plumbing	N/A	300	300	N/A	300	N/A	350	350	350	350	N/A	N/A	Provide hook-up location to existing utility lines. Provide "z" coordinate for utilities. MPA AutoCAD template file or .rvt model file
	General Service Compressed Air	N/A	300	300	N/A	300	N/A	350	350	350	350	N/A	N/A	
	Process Support Plumbing	N/A	300	300	N/A	300	N/A	350	350	350	350	N/A	N/A	
	HVAC													
	Facility Fuel Systems	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Heating Systems	N/A	350	350	N/A	350	N/A	350	350	350	350	N/A	N/A	
	Cooling Systems	N/A	350	350	N/A	350	N/A	350	350	350	350	N/A	N/A	
	Facility HVAC Distribution System	N/A	350	350	N/A	350	N/A	350	350	350	350	N/A	N/A	
	Ventilation	N/A	350	350	N/A	350	N/A	350	350	350	350	N/A	N/A	
	Special Purpose HVAC Systems	N/A	350	350	N/A	350	N/A	350	350	350	350	N/A	N/A	
	Fire Protection													
	Fire Suppression	N/A	300	300	N/A	300	N/A	300	350	300	300	N/A	N/A	
	Fire Protection Specialties	N/A	350	350	N/A	350	N/A	350	350	350	350	N/A	N/A	
	Electrical													
	Facility Power Generation	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Electrical Service and Distribution	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	General Purpose Elec. Power	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Lighting	300	350	350	N/A	350	N/A	350	350	350	350	N/A	N/A	
	Misc. Electrical Systems	N/A	200	200	N/A	200	N/A	200	200	200	200	N/A	N/A	
	Communications													
	Data Communications	N/A	200	200	N/A	200	N/A	200	200	200	200	N/A	N/A	
	Voice Communications	N/A	200	200	N/A	200	N/A	200	200	200	200	N/A	N/A	
	Audio-Video Communication	N/A	200	200	N/A	200	N/A	200	200	200	200	N/A	N/A	
	Distributed Communications and Monitoring	N/A	200	200	N/A	200	N/A	200	200	200	200	N/A	N/A	
	Communications Components	N/A	300	300	N/A	200	N/A	300	300	300	300	N/A	N/A	
	Elect Safety and Security													
	Access Control and Intrusion Detection	300	200	200	N/A	200	N/A	200	200	200	200	N/A	N/A	
	Electronic Surveillance	200	200	200	N/A	200	N/A	200	200	200	200	N/A	N/A	
	Detection and Alarm	300	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Electronic Monitoring and Control	300	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Electronic Safety and Security Supplementary Components	300	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Integrated Automation													
	Integrated Automation Facility Controls	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	E													
	Equipment													
	Vehicle and Pedestrian Equipment	N/A	N/A	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Commercial Equipment	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Institutional Equipment	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
Furnishings	F													
	Furnishings													
	Fixed Furnishings	N/A	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Movable Furnishings	N/A	200	200	N/A	200	N/A	200	200	200	200	N/A	N/A	
Specialties	G													
	Special Construction													
	Special Function Construction	200	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Special Facility Components	200	300	300	N/A	300	N/A	300	300	300	300	N/A	N/A	
	Athletic and Recreational Special Construction	200	N/A	200	N/A	200	N/A	300	300	300	300	N/A	N/A	
	Special Instrumentation	200	200	200	N/A	200	N/A	300	300	300	300	N/A	N/A	

Appendix C 1 – Sustainability Guidelines

https://www.massport.com/sites/default/files/2025-01/2025-Massport-Sustainability-Design-Guidelines-FINAL.pdf

Appendix C 2 – Floodproofing Guidelines

https://www.massport.com/sites/default/files/2025-01/2025-Massport-Floodproofing-Design-Guide_FINAL.pdf