U.S. Customs and Border Protection (CBP) issues this design standard to provide the requirements, clarifications, and government regulations and directives applicable to Cargo Processing Facilities.

This 2019 Cargo Facilities Design Standard (CFDS) replaces all previous cargo facility technical requirements.

The development of the CFDS involved compiling all of the following subject matter into this Standard:

- Organization into the design standard template layout and content.
- Focus on the unique design issues relevant to specific CBP facilities and spaces.
- Consolidation of applicable room data sheets and graphics into a separate chapter.
- Comprehensive data sheets that include identification of construction materials and clarifications of physical security requirements.
- New engineering disciplines.
- Graphics.
- Clarification of cargo processing technologies, inspection processes, and security requirements.
- List of some applicable authorities.

The following stakeholders provided best practices, lessons learned, and subject matter feedback during the development of the CFDS:

- CBP Office of Field Operations (OFO)
  - Field Office personnel.
  - Facilities and Technology Division (F&T) program managers.
  - Admissibility and Passenger Programs (APP).
  - Non-Intrusive Inspection (NII) Division.
  - Canine Enforcement Officer (CEO) program managers.
  - Agriculture specialists, chiefs, and program managers.

- CBP Office of Enterprise Services (ES)
  - Field Office Facilities, Program Management Office (FOF PMO) project managers (PM).
  - Office of Information and Technology (OIT) specialists and field deployment personnel.

- CBP Office of Professional Responsibility (OPR) Security Management Division (SMD) specialists.
- CBP Office of Public Affairs (OPA).
- CBP Office of Chief Counsel (OCC).
- External stakeholders.
- Subject matter experts including architects, engineers, planners, physical security, and life safety accessibility experts.
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INTRODUCTION

Cargo Facilities Design Standard 2019 (Draft)

U.S. Customs and Border Protection
CHAPTER 1 - INTRODUCTION

1.1 BACKGROUND

U.S. Customs and Border Protection (CBP) is the single component within the U.S. Department of Homeland Security (DHS) responsible for managing, securing, and controlling the Nation’s borders to prevent terrorists and their weapons from entering the United States.

CBP’s priority mission is homeland security, with responsibilities for improving security both at and between ports of entry (POEs), as well as extending the zone of security beyond the physical borders of the United States.

CBP provides security and facilitation of travel at the POEs by using traditional and innovative approaches. Traditional methods include comprehensive examination of suspect cargo and goods and an intensified effort to protect American agriculture from the introduction of injurious plants, animals, pests, and disease. Innovative approaches to enhance efficient inspection include the use of non-intrusive inspection technology (NIIT), including radiation portal monitors (RPMs).

The Cargo Facility Design Standard (CFDS) identifies CBP requirements for examination facilities and equipment. This Standard must be used for planning new facilities, renovating existing facilities, and equipping CBP cargo facilities. The CFDS provides consistent requirements for CBP’s operational space to be suitable for controlling the entry and exit of cargo and goods. Facility types are defined in this chapter, Section 1.7, Facility Types and Operational Definitions. CBP’s operational space houses CBP security areas (CSAs) and other federal agencies responsible for the enforcement of federal laws, pertaining to immigration, drugs, agriculture, wildlife, smuggling, and commerce, as determined by CBP.


For the purpose of the CFDS, the term cargo facility operator (CFO) shall refer to the operator and/or owner of bonded warehouses, container stations, foreign trade zones, centralized examination stations, and intermodal yards. The CFO is responsible for complying with requirements in the CFDS, whether the CFO works for a private company or is the local port authority (PA).

1.2 APPLICATION AND USE OF THIS CARGO FACILITY DESIGN STANDARD

The CFDS, henceforth referred to as this Standard, reflects national policy, procedures, and facility development standards for the planning, programming, design, and construction of new CSAs at cargo facilities, or the renovation, addition, or alteration to existing cargo facilities. This Standard serves as the primary reference document for architect/engineer (A/E) consultants, government agencies, CFOs, transportation lines, PAs, and CBP personnel involved with the planning, design, development, and alteration of cargo facilities. The use of this Standard and early CBP involvement in the facility development process will render a cargo facility that meets CBP’s operational requirements. This Standard identifies, defines, and describes project stakeholders and applicable laws, standards, regulations and policies, operations, adjacencies, design concepts, categorizes spaces, and specific technical criteria on building materials and systems.
This Standard is used to develop planning and programming criteria for inclusion in the program of requirements (POR), to direct execution of design and engineering documentation, and to inform construction and construction administration. This Standard also establishes project close-out and post-occupancy roles and responsibilities.

1.2.1 Definition of the Cargo Facility Design Standard

This Standard reflects CBP policy and establishes mandatory minimum requirements to be met in all applicable CBP cargo facility projects. Proposed revisions or modifications thereto shall follow alternative or equivalent means, exceptions, and deviations per Section 1.2.6.

The types of cargo facilities that must comply with this Standard include:

- Cargo Inspection Facilities.
- Centralized examination stations (CES).
- Cargo Warehouse Facilities.
- Air Cargo Facilities.
- Seaport Cargo Terminal Facilities.
- Foreign trade zones (FTZs).
- Intermodal Yard Facilities.

1.2.2 Applicability

This Standard shall apply to the following cargo facility planning, programming, and construction projects as follows:

- All new construction.
- All additions to an existing cargo facility, defined as additional operational and physical capacity to buildings or site structures, including roadways or new equipment or systems required for port functions and operations.
- All alterations to an existing cargo facility, defined as remodeling, improving, extending, or making other tenant requested changes to an existing facility, exclusive of maintenance or repair work. Alterations projects do not include an expansion of a physical building or adding a new building to a campus location.
- Planning, programming, engineering, design, project execution, and closeout/acceptance activities for all the above-mentioned project types shall comply with this Standard, unless otherwise directed by the Field Operations Facilities Program Management Office project manager (FOF PMO PM).
- This Standard does not apply to maintenance or repair projects where the nature of work requires returning a real property asset to its prior operational status or to such condition that it may effectively be used for its designated purpose.
- Major and minor renovations as defined by the FOF PMO.

1.2.3 Use of Terms “Will,” “Shall,” “Must,” “Should,” and “May”

The terms “Will,” “Shall,” “Must,” “Should,” and “May” are used throughout this Standard as defined below:
1. Will, Shall, and Must indicate a mandatory course of action.

2. Should indicates a course of action that is strongly preferred, but not mandatory.

3. May indicates a course of action that is preferred, but not mandatory: often it includes selection of a course of action from more than one acceptable option.

CBP shall review proposed alternatives to all directions, criteria, or requirements. Refer to Section 1.2.6 for details.

1.2.4 Current Edition of the Standard

The most current signed edition of this Standard, including errata, on the date of project inception shall apply.

Project inception is defined as the actual start of an in-house CBP planning or the date of contract with a consultant commissioned to provide planning, prospectus development, or similar. As projects move from planning phases to building and design phases, the date of project inception shall be revised to the date of contract with an A/E consultancy for development of a building project for design-bid-build delivery, or the date of issuance of a request for proposal (RFP) for a building project for design-build delivery.

The completion of a kick-off meeting or the pre-design phase generally marks the end of the planning phase of a project and the beginning of the design phase. In the design phase, incorporating new requirements into the design of a project starts to have cost and schedule implications; therefore, potential changes or new requirements must follow the FOF PMO change control process (to be managed by the FOF PMO PM). Through the change control process, requirements and proposed alternatives are evaluated against cost and schedule implications. This process determines whether the new requirement will be implemented. When a design is delayed by two years or more after the completion of the kick-off meeting, a requirements refresh should take place to ensure that the design programming and budget will allow the project to be designed and constructed to this Standard. The CBP-approved POR shall be finalized before the project moves into the design phase.

A schedule of standard compliance is summarized below.

The FOF PMO provides technical support in the areas of architecture, engineering, real estate, and environmental services and is the author and custodian of this Standard.

Table 1-1. Schedule of Standard Compliance

<table>
<thead>
<tr>
<th>If update(s) to this Standard are issued when the...</th>
<th>Then...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kick-off meeting is not yet complete</td>
<td>All planning, site selection, design, and construction activities/products must be fully compliant with the updated/revised Standard.</td>
</tr>
<tr>
<td>Kick-off meeting and pre-design activities are complete—</td>
<td>Design and construction activities must comply with the current Standard. A requirements refresh should take place before design funds are requested to...</td>
</tr>
</tbody>
</table>
For Official Use Only

INTRODUCTION

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. § 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with DHS policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid “need-to-know” without prior approval of an authorized DHS official.

<table>
<thead>
<tr>
<th>Awaiting Design Funding</th>
<th>ensure that the design programming and budget allow the project to be designed and constructed to the updated/revised Standard.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kick-off Meeting is Complete – Design Documents are Less Than 60% Complete</td>
<td>Design and construction activities must comply with the updated/revised Standard as they affect required spaces, adjacencies, code compliance, physical security, and life safety. Compliance with all other new requirements presented in the updated/revised Standard requires review by the FOF PMO PM based on a thorough assessment of cost, schedule, and scope impacts, as well as compliance with the Office of Professional Responsibility (OPR) physical security standards and Office of Field Operation (OFO) operational considerations. If it is found to be in the best interest of CBP to comply with new requirement(s) or if there is a change to the baseline schedule and/or cost, the FOF PMO PM shall submit a formal change request to obtain approval and funding for the requirement.</td>
</tr>
<tr>
<td>Design Documents are Greater than 60% but Less than 90% Complete</td>
<td>Design and construction activities must comply with the updated/revised Standard as they affect code compliance, physical security, and life safety. Compliance with all other new requirements presented in the updated/revised Standard requires review by the FOF PMO PM based on a thorough assessment of cost, schedule, and scope impacts, as well as compliance with OPR physical security standards and OFO’s operational considerations. If it is found to be in the best interest of CBP to comply with a new requirement(s) or if there is a change to the baseline schedule and/or cost, the FOF PMO PM submits a formal change request to obtain approval and funding for the requirement.</td>
</tr>
<tr>
<td>Final Design Documents are Issued for Construction, but Construction has been Delayed.</td>
<td>Design shall adhere to new requirements of the most current CFDS edition. Compliance with all requirements presented in the updated/revised CFDS requires review by the FOF PMO PM based on a thorough assessment of the effects on schedule, scope and compliance with OPR physical security standards and OFO operational considerations.</td>
</tr>
</tbody>
</table>

This Standard is subject to CBP’s revisions, expansions, and updates. This Standard may be requested through the local CBP Field Office. They are not publicly distributed.

1.2.5 Standardization

CBP standardizes elements that are common to most cargo facilities to ensure consistency in quality, cost, and performance of the cargo facilities. This includes both building plans for the small port prototypes and functional components, such as NII buildings and inspection booths. In addition to information provided within each section, this Standard includes drawings, specifications, and other documentation for these standard items in the appendices.
Depending on project location, operations, and project constraints, the FOF PMO PM may identify certain standardized items to be mandatory ("shall"), strongly preferred ("should"), or preferred ("may"). These designations shall be included in the RFP for both design-bid-build and design-build project delivery. In the absence of these standardized items in the RFP, CBP shall identify standardized items on the schematic design to be incorporated in the design development phase. In all designations, the salient features of the standardized item as described in the room data sheets (RDSs), facility type narratives, specifications, fixtures, furniture, and component descriptions, within the main chapters or appendices, shall be incorporated into the design.

1.2.6 Alternate or Equivalent Means, Exceptions, and Deviations

If certain constraints or operational requirements require an alternate or equivalent means, exception, or deviation to this Standard for a particular cargo facility project, then a waiver request must be submitted.

Prior to the requirements review process and the final POR approval, a waiver request approved by a director of field operations (DFO) must be submitted as part of the project initiation documentation in accordance with the OFO Field Facility Request Initiation and Execution standard operating procedure (SOP) (MSD-F&T-003.01). The OFO mission support director (MSD) recommends approval or disapproval of design standard waivers/deviations to the FOF PMO.

If after the final POR approval, or at any time during design and construction, a proposal must be submitted by the FOF PMO PM to the FOF PMO program controls branch. The FOF PMO will review and consider the proposal as a project change request (CR) in accordance with the FOF Project Change Management Process (FOF-0300-CMP). The FOF Project Change Management Process is an internal process specific to the FOF PMO. Stakeholders from specific CBP offices, such as the OPR Security Management Division (SMD) and the Office of Information and Technology (OIT), must review and approve waiver/deviation requests related to their program to ensure there are no compromises of any requirements. Reviews from these stakeholders must be submitted by the PM, with the CR, in compliance with the stakeholders' review and approval protocols.

The proposals may be requested and prepared by the FOF PMO PM, facility stakeholders, or consulted A/E. The proposal shall address its impact on the pertinent characteristics of the cargo facility, including, but not limited to operational efficiency, space configurations, passenger facilitation, officer and public safety, and physical security. The proposal shall not degrade security, safety, or CBP operations. Proposals will be evaluated, based on the number of preferred criteria included in the proposal.

The FOF approval authorities, as outlined in the FOF Project Change Management Process, will make final CBP approval determinations regarding requests for alternative or equivalent means, exceptions, and deviations to this Standard, and forward such determinations to the FOF PMO PM for distribution to relevant parties.

This Standard recognizes the need for flexibility in the planning of proposed design requirements on a port-by-port basis.

1.3 ORGANIZATION

Many offices and branches within CBP contribute to the planning, design, and construction of cargo facilities. The following are the primary stakeholders and business partners in the cargo facility development.
1.3.1 Office of Field Operations

The OFO is the largest component in CBP and is responsible for border security, including anti-terrorism, immigration, anti-smuggling, trade compliance, and agriculture protection, while simultaneously facilitating the lawful trade and travel at United States POEs that are critical to our Nation’s economy. The OFO is responsible for overseeing the operations at 328 POEs and 70 locations in more than 40 countries internationally with a staff of more than 28,000 employees.

1.3.2 Office of Field Operations Cargo and Conveyance Security

Cargo and Conveyance Security (CCS) is the executive director office within the OFO Headquarters that oversees NII, RPMs and technology, cargo verification, cargo control, and Customs Trade Partnership against Terrorism (C-TPAT). This office also oversees the National Targeting Center – Cargo (NTCC), Container Security Initiative (CSI), and Secure Freight Initiative (SFI).

1.3.3 Office of Field Operations Non-Intrusive Inspection

The Non-Intrusive Inspection (NII) Division of OFO develops and implements the NII Acquisition Strategy and Deployment Plan from needs generation and sourcing to procurement, deployment, and maintenance. The NII technology includes large-scale X-ray and gamma-ray imaging systems, radiation detection equipment, small-scale baggage X-ray systems, and portable and hand-held devices.

CBP is constantly developing new NII technologies and systems. Any future NII developments may allow for alternative processing techniques and affect the layout of the site or facility. The NII Division should be consulted to obtain the latest information.

1.3.4 Office of Field Operations Canine Enforcement Program

The Canine Enforcement Program (CEP) trains and deploys highly trained detector dog teams to help officers interdict illegal narcotics, concealed humans, prohibited agriculture products, explosives, and undeclared currency. Canine units are collocated at OFO facilities as needed.

1.3.5 Office of Field Operations Agriculture Program and Trade Liaisons Office

CBP agricultural specialists protect America and its natural resources from threats to agriculture while facilitating travel and trade. Their historic mission of preventing and mitigating the introduction of harmful pests into the United States provides CBP with the expertise to recognize and prevent the entry of organisms that could be used for biological warfare or terrorism.”

1.3.6 Office of Facilities and Asset Management, Facilities Management and Engineering

Facilities Management and Engineering (FM&E) oversees the planning, design, and construction or lease of each CBP facility, as well as all maintenance and repairs through three integrated PMOs:

1. Field Operations Facilities.
Each PMO plans, executes, and manages the facility’s portfolio for a single CBP business partner in conjunction with the Facilities Management Council, service providers, and stakeholders.

1.3.7  **Field Operations Facilities Program Management Office**

The FOF PMO provides project management services for all aspects of the OFO facility portfolio, including strategic planning, individual cargo facility planning, programming, and construction. The FOF PMO also oversees project management lifecycle, building operations, maintenance and repair (BOMR), best practices, and overtime utilities.

1.3.8  **Land Border Integration Project Management Office**

The Land Border Integration (LBI) PMO develops innovative technologies and processes to enhance efficiencies in both security and throughput of cargo facilities. The LBI solutions involve piloted programs that shall be coordinated with OFO and field offices.

1.3.9  **Office of Professional Responsibility, Security Management Division**

The OPR’s SMD establishes the standards, policies, procedures, and practices for the physical security of CBP personnel, facilities, information, and assets from deliberate or unforeseen threats. The SMD supports the security mission by promoting officer safety and infrastructure protection through the development of consistent physical security policies and standards. By conducting physical security vulnerability assessments, construction drawing reviews, certifications, inspections, and security surveys, SMD identifies requirements for all CBP physical security systems, devices, and building features. The SMD ensures effective physical security standards and best practices at all CBP facilities.

The Physical Security Operations Branch (PSOB) within SMD provides physical security oversight for CBP through three regional security offices.

1.3.10 **Office of Information Technology**

The OIT establishes the standards, policies, procedures, and practices regarding information, technology, and systems needs at CBP facilities. The OIT supports the CBP mission by promoting efficiency and effective processing by using technology and network infrastructure. By conducting site surveys, construction drawing reviews, certifications, inspections, and system commissioning, OIT ensures that all facility sites are supported by the appropriate technology solutions.

To ensure compliance with CBP information and technology standards and best practices at their facilities, OIT works with all CBP offices.

A.  **Integrated Logistics Branch**

The Integrated Logistics Branch (ILB) performs the maintenance, repair, and operational support for the NII program and radiation detection equipment (RDE) at Continental United States (CONUS) and Outside the Continental United States (OCONUS) locations. The ILB supports the Border Security Deployment Program (BSDP), providing centralized area video surveillance system (CAVSS) design, deployment, sustainment, and operational support at POEs. For the United States Border Patrol (USBP), ILB performs intermediate-level corrective maintenance, repair, and operational support for the remote
video surveillance systems (RVSS), mobile video surveillance systems (MVSS), unattended ground sensors (UGS), and handheld agent support equipment (ASE). Other services provided by ILB include Tier 2 help desks; acquisition, testing, and logistic support for CBP program offices acquiring enforcement technology; project management; engineering analyses; warehouse management; asset management; equipment relocations; logistics analysis; metrics development and reporting; and other services as applicable.

B. Network Architecture and Engineering

Network architecture and engineering (NA&E) develops network infrastructure designs that meet current business and technical requirements and incorporates specifications to support availability, reliability, security, scalability, and performance. The NA&E provides information systems security officers to ensure that airport systems comply with all relevant information security regulations and policies to become certified and accredited to operate on CBP and DHS networks.

C. Wireless Technology Program

The wireless technology program (WTP) oversees CBP’s wireless and tactical communications assets. The major functional areas identified by the WTP include enabling and enhancing specialized communications operational support, enabling and enhancing tactical communications, promoting and supporting integration of emerging technologies, and ensuring sound management of wireless program projects. The WTP supports these functional areas by delivering enterprise-wide services that ensure field personnel have the resources needed to perform their missions effectively and to maintain officer safety.

D. Cargo Systems Program Directorate

The Cargo System Program Directorate (CSPD) administers and directs the development, maintenance, and deployment of systems and interfaces that support CBP, other government agencies, and the trade community regarding the importation, exportation, and control of merchandise shipments. The CSPD also manages CBP legacy systems – automated commercial system and automated export system – while developing and deploying the modernized trade processing systems.

E. Cybersecurity Directorate

Technology solutions play a significant role supporting CBP’s mission. They ensure the security of our Nation’s borders and improve secure travel and trade. While technology and network-enabled capabilities significantly enhance CBP’s daily operations, it also increases CBP’s vulnerability to external attacks through cyberspace. This creates opportunities for adversaries (e.g., nation states, organized criminals, and terrorists) to use cyber-attacks to disrupt CBP’s operations and compromise the confidentiality, integrity, and availability of CBP data.

The Cybersecurity Directorate's mission is to enhance cybersecurity posture by proactively managing cyber risks, coordination cyber information sharing, and providing an agile, effective, and cost-efficient approach to cybersecurity that aligns to the evolving cyber threat environment.
1.3.11 Printing, Graphics and Distribution Branch

Printing, Graphics, and Distribution (PG&D) Branch of the Office of Facilities and Asset Management (OFAM) retains the responsibility and authority for reviewing, confirming consistency with the CBP Signage Standard, and approving all signage elements when a construction contract includes signage. All signage ordered and printed shall adhere to a rigid quality control process to reduce the need for rework, poor quality printed products, or improper use of the DHS Seal and CBP Signature, as well as the name and location of the CBP facility. The contractor shall provide samples using the submittal process for review and CBP approval prior to mass production.

1.3.12 Office of Human Resource Management – Occupational Safety and Health

The Office of Human Resource Management – Occupational Safety and Health must have the opportunity to review any design that includes hazardous materials (HAZMAT) containment, respiratory concerns, confined spaces, and radiation concerns.

1.3.13 Office of Public Affairs

The Office of Public Affairs (OPA) supports the interface of OFO and cargo facilities with the public and ensures that information disseminated and presented to the public aligns with CBP and DHS requirements. The OPA also ensures that CBP and DHS branding at cargo facilities complies with approved standards.

1.3.14 Office of Chief Counsel

Upon request by an authorized CBP official, the Office of Chief Counsel (OCC) reviews legal requirements pertaining to the planning and design of POEs. The FM&E and OFO officials routinely request legal advice from OCC as legal issues arise.

1.4 INSPECTION TECHNOLOGIES AND PROGRAMS

This Standard’s Appendix D, Equipment, provides a detailed overview about these systems used by CBP at cargo facilities. The following are descriptions of current technologies, systems, and programs used by CBP.

1.4.1 Non-Intrusive Inspection

CBP requires the use of various technologies in different combinations, including, but not limited to RPMs, stationary NII imaging systems, mobile truck-mounted NII imaging systems, rail NII imaging systems, pallet NII imaging systems, empty truck portals, and Z-portals. The NII equipment provides an efficient and effective means for examining vehicles, containers, cargo and goods seeking entry into the United States.

1.4.2 Radiation Portal Monitor System

The RPMs are scanning systems used to detect the presence of radioactive material in vehicle containers, cargo, and goods seeking entry into the United States. The RPMs are located at various locations based on the type of cargo facility. There may also be RPM systems in the secondary area for additional scanning and pinpointing of suspected radioactive cargo. Deployment of the RPMs shall be coordinated with OFO and NII PMO.
1.4.3 Automated Biometric Identification System / Integrated Automated Fingerprint Identification System

The Automated Biometric Identification System (IDENT) is a computerized system that permits the capture of biometric information.

The Integrated Automated Fingerprint Identification System (IAFIS) is a ten-print fingerprint system.

1.5 APPLICABLE LEGAL AUTHORITIES AND POLICY GUIDANCE

The following authorities and policies are relevant to the procedures and requirements in this Standard. Each of these authorities can be consulted through the FOF PMO PM to ensure compliance. For assistance in understanding the unique legal requirements of a specific project, the FOF PMO PM will be the point of contact to OCC. All communications to OCC will go through the FOF PMO PM.

1.5.1 DHS Management Directive

A cargo facility construction and/or renovation project could trigger National Environmental Policy Act (NEPA) compliance obligations for CBP. Ensuring all NEPA compliance obligations are met will likely lengthen the timeline for cargo facility construction and/or renovation projects. CBP’s NEPA compliance is governed by DHS Management Directive 023-01, Environmental Planning Program.

Other DHS Management Directives, including processes, design, and construction, may also apply to the CFO.

1.5.2 Standards, Policies, and Directives

The CFO facilities must comply with the following standards, policies and directives. The current version of each Standard as of publication of this Standard is listed in Table 1-2, but the current version as of the project inception date must be used.

Table 1-2. Standards, Policies and Directives

<table>
<thead>
<tr>
<th>Document Title (version as of CFDS publication date)</th>
<th>Responsible CBP Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of Force Policy, Guidelines and Procedures Handbook, HB 4500-01C (May 2014), or current edition and amendments</td>
<td>Office of Training and Development</td>
</tr>
<tr>
<td>CBP Directive 5510-039, Local Area Network Standards and Backups (August 23, 2004)</td>
<td>OIT</td>
</tr>
<tr>
<td>Document Title (version as of CFDS publication date)</td>
<td>Responsible CBP Office</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CBP National Standards on Transport, Escort, Detention, and Search (TEDS) (October 2015), or current edition and amendment(s); and CBP Directive 3340-030B (August 8, 2008)</td>
<td>OFO – Mission Support</td>
</tr>
<tr>
<td>Seized Asset Management and Enforcement Procedures Handbook, HB 4400 – 01B (July 2011), or current edition and amendment(s)</td>
<td>OFO – Fines Penalties and Forfeitures Division</td>
</tr>
<tr>
<td>Canine Enforcement Program Handbook, CIS HB 3200-07A (August 2002), or current edition and amendment(s)</td>
<td>OFO National Canine Enforcement Program (NCEP)</td>
</tr>
<tr>
<td>Registration of Manufacturers, Distributors, and Dispensers of Controlled Substances, 21 C.F.R. §§ 1301.72 - 1301.76</td>
<td>U.S. Department of Justice, Drug Enforcement Administration</td>
</tr>
<tr>
<td>Facilities Standards for the Public Buildings Service, PBS P100 (April 2017), or current edition and amendment(s)</td>
<td>U.S. General Services Administration</td>
</tr>
<tr>
<td>Bonded Warehouse Manual for Customs and Border Protection Officers and Bonded Warehouse Proprietors, HB 3500-11 (January 18, 2012), or current edition and amendment(s)</td>
<td>OFO – CCS</td>
</tr>
<tr>
<td>Foreign-Trade Zone Manual, Pub. No. 0000-0559A (2011), or current edition and amendment(s)</td>
<td>OFO – CCS</td>
</tr>
<tr>
<td>CBP Directive 2130-019, Information and Technology Activities (January 2, 2009), or current edition and amendment(s)</td>
<td>OIT</td>
</tr>
</tbody>
</table>
1.6 AUTHORITIES SPECIFIC TO CARGO FACILITIES

The following authorities are applicable to the construction, addition, alteration, and operation of the various types of cargo facilities listed below. These authorities are referenced to substantiate CBP’s operational requirements for all types of cargo facilities. These authorities charge CBP to deter the entry of terrorist weapons, controlled substances, and a variety of prohibited and restricted items.

1.6.1 CBP’s Authority to Inspect, Search, and Examine

All cargo, merchandise, packages, shipments, and baggage arriving in, or departing from, the United States are subject to inspection, search, and examination by CBP. The laws authorizing CBP inspection, search, and examination include, but are not limited to, 19 U.S.C. §§ 482, 1433, 1434, 1459, 1461, 1467, 1496, 1499, 1581, 1582, 1595, 1644a; 6 U.S.C. § 231; 31 U.S.C. § 5317, and the CBP regulations that are promulgated at Title 19 of the Code of Federal Regulations and more specifically cited below.

1.6.2 Bonded Warehouses

CBP has the authority to regulate all classes of bonded warehouses under 19 C.F.R. §§ 19.1 – 19.39.

1.6.3 Container Stations

CBP has the authority to regulate container stations under 19 C.F.R. §§ 19.40 – 19.49. CBP has the authority to regulate cargo containers and the road vehicles used in the transport of cargo containers under 19 C.F.R. §§ 115.1 – 115.68.

1.6.4 Centralized Examination Stations

CBP has the authority to regulate CESs under 19 C.F.R. §§ 118.0 – 118.23.

1.6.5 Foreign Trade Zones

CBP has the authority to regulate the FTZs under 19 U.S.C. §§ 811, 81r; 19 C.F.R. §§ 146.82, 146.83.
1.6.6 **Air Cargo Facilities**

CBP has the authority to regulate air cargo facilities under 19 C.F.R. §§ 122.0 – 122.189.

1.6.7 **Radiation Portal Monitors**

CBP is required to perform radiological examinations of cargo containers entering by vessel under the 6 U.S.C. §§ 921 – 926.

1.7 **FACILITY TYPES AND OPERATIONAL DEFINITIONS**

1.7.1 **Bonded Warehouse**

A bonded warehouse is privately owned, and it is operated by a bonded warehouse proprietor. There are several different classifications of bonded warehouses as defined in 19 C.F.R. § 19.1.

1.7.2 **Centralized Examination Station**

A CES is privately owned, and it is operated by a centralized examination station operator. CBP Officers examine merchandise at these locations, per CBP regulations. A CES is under the jurisdiction of the port director (PD). Refer to 19 C.F.R. § 118.1 for more information.

Containers unloaded from a vessel may be held at a container freight station (CFS) at or near the cargo terminal. A CFS is generally provided by a single freight carrier or multiple carriers operating at the same terminal(s).

1.7.3 **Foreign Trade Zone**

An FTZ is a restricted access site, in or adjacent to a CBP POE. It is privately owned. Foreign and domestic goods are held until they ready to be released into international commerce. Merchandise may enter an FTZ without a formal customs entry or the payment of customs duties or government excise taxes. In the FTZ, goods may be stored, tested, sampled, repackaged or relabeled, cleaned, combined with other products, repaired, assembled, or similar actions. CBP Officers examine the merchandise when it enters CBP territory for domestic consumption, per CBP regulations. Refer to 15 C.F.R. § 400.2 for more information.

1.7.4 **CBP Operational Support Space**

CBP conducts operational support functions related to cargo inspection near the points of inspection. Facilities must be provided by port authorities, CFOs, and/or carriers to support law enforcement operations required by CBP. The operational support space is typically office space, with added capacity for special inspection functions, including agriculture, canine, X-ray, and special security accommodations (i.e. surveillance, seized property, and access control).

1.8 **AUTHORITIES FOR CBP FACILITIES AND PROJECTS**

The following authorities and policies are relevant to the procedures and requirements in this Standard. Each of these authorities can be consulted through the FOF PMO PM to ensure compliance. For assistance in understanding the unique legal requirements of a specific project, FOF PMO PM will be the point of contact to OCC. All communications to OCC will go through the FOF PMO PM.
## 1.8.1 Applicability of Building Codes and Zoning Laws

Complying with nationally recognized building codes, state and local codes, and zoning laws pertaining to construction is complicated by the federal government’s sovereign immunity under the Supremacy Clause of the Constitution. Sovereign immunity may only be waived by congressional action. In the absence of such a statutory waiver, the general rule is that federal agencies are not subject to state and local codes and laws. Agency heads, however, can adopt policies directing their agencies to conform their construction and alteration projects to non-federal requirements.

## 1.8.2 Compliance with Nationally Recognized Codes, 40 U.S.C. § 3312

This statute, 40 U.S.C. § 3312, requires that a federal agency engaged in building construction or alteration comply with one of the nationally recognized model building codes and other applicable nationally recognized codes “to the maximum extent feasible as determined by the head of the agency.” The agency shall also consider non-procedural state or local zoning requirements and shall consult and cooperate with state and local officials.

A. Nationally Recognized Codes and Standards:

CBP has adopted the technical requirements of the family of codes issued by the International Code Council (ICC), except Chapter 10, Means of Egress. CBP has adopted the technical egress requirements of the National Fire Protection Association (NFPA), Life Safety Code (NFPA 101) (www.nfpa.org), in lieu of the technical egress requirements of the ICC Chapter 10. The ICC codes are available at www.iccsafe.org.

The date of the code to be used shall be that which is in force on the date of issuance of the RFP for design-build projects and the date of contract award with the A/E for design-bid-build projects.

B. State and Local Codes

Federal agencies are generally not subject to state and local codes and laws, but agency heads may direct conformance to non-federal requirements. Non-procedural state and local requirements shall be considered when planning and designing signage for CBP facilities. State and local government officials shall be provided opportunities to review designs for building code and zoning ordinance compliance upon their request. They shall also be allowed to inspect construction, but they do not have authority to reject, accept, or make changes to work. No fees may be paid for such reviews or inspections.

C. Natural and Cultural Resources Compliance

CBP facilities shall comply with the following authorities:

- NEPA, 42 U.S.C. §§ 4321 et seq. requires federal agencies to analyze the impact on the environment of major federal actions.
- DHS Management Directive 023-01 Environmental Planning Program (October 31, 2014).
- National Historic Preservation Act, 54 USC §§ 300101, 306108 and 306101. Requires federal agencies to consult with the Advisory Council on Historic Preservation regarding the impact of their
undertakings on historic and cultural resources and to assume responsibility for the preservation of historic properties the agency owns or controls.


D. Environmental Compliance

Choosing a site for a CBP facility requires knowledge of the site’s past usage to determine suitability for CBP operations and the potential for contamination that will create liability for the government. Additionally, on-going operations and maintenance conducted at CBP facilities shall comply with the following laws and policies to protect human health, as well as air, soil, and water quality:

- CBP Memorandum from Executive Director, Asset Management, Requirements for Environmental Due Diligence on Property Transfers and Documentation of Categorical Exclusions (December 21, 2006). This memorandum explains that environmental site assessments must be completed upon acquisition of real property to be occupied by CBP.
- Clean Air Act, 42 U.S.C. §§ 7401 et seq.
- Safe Drinking Water Act, 42 U.S.C. §§ 300f et seq.
- Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901 et seq. This act regulates solid and hazardous waste treatment, storage and disposal; it contains requirements for installation, operation, and maintenance of underground storage tanks. It also addresses spent munitions. State and local laws similar to RCRA’s statutory and regulatory requirements must also be observed by federal agencies pursuant to 42 U.S.C. § 6961.
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 U.S.C. §§ 9601 et seq. The CERCLA contains requirements for due diligence necessary to avoid liability for pre-existing contamination when acquiring real property.
- Emergency Planning and Community Right to Know Act, 42 U.S.C. §§ 11002, 11021-11023 et seq. This Act establishes reporting requirements for facilities where hazardous chemicals requiring a material safety data sheet are used and stored.
- Toxic Substances Control Act (TSCA), 15 U.S.C. §§ 2661-2671. The TSCA establishes acceptable levels of radon in a building. When the potential for elevated radon levels is identified during a site inspection, mitigation shall be incorporated in the design and construction, including the most current standards set by the Environmental Protection Agency (EPA) for construction methods to reduce radon levels below levels set by the EPA.
E. Construction Materials

The following materials are prohibited in new construction. During remodeling or repair, the presence of such materials will require implementation of worker safety measures, and their removal shall be undertaken in accordance with legal requirements.


- Polychlorinated biphenyls: PCB-containing items must be disposed in accordance with TSCA, 15 U.S.C. § 2605(e).

- Solder or flux must be “lead free,” which means they may not contain more than 0.2% lead, and not more than a weighted average of 0.25% lead when used with respect to the wetted surfaces of pipe, pipe fittings, plumbing fittings, and fixtures, as provided in the Safe Drinking Water Act, 42 U.S.C. § 300g-6(a), (d).

- Ozone depleting compounds should be eliminated during and after construction when alternative environmentally preferable products are available, consistent with either the Montreal Protocol and Title VI of the Clean Air Act Amendments of 1990 (42 U.S.C. §§ 7671 et seq.), or equivalent overall air quality standards that consider life cycle impacts.

- Building materials should meet or exceed EPA’s recycled content recommendations and/or the United States Department of Agriculture’s bio-based content recommendations or are otherwise environmentally preferable (e.g., see Federal Green Construction Guide for Specifiers at http://www.wbdg.org/fcc/epa/federal-green-construction-guide-specifiers). Materials should also meet performance requirements and be available at reasonable costs.

F. Energy and Resource Conservation

The following five federal authorities shall be followed at a minimum for all CBP facilities projects:


CBP facilities shall comply with the following laws and policies that are designed to promote “green” standards and energy conservation:


CBP residential facilities shall comply with the following laws and policies that are designed to promote “green” standards for environmental sustainability. These requirements are specified below:


G. Facility Design and Infrastructure

All CBP facilities shall incorporate the Guiding Principles for Sustainable Federal Buildings and Associated Instructions (“Guiding Principles”) into new construction or renovation projects. The incorporation of Guiding Principles shall not compromise CBP operations or security.

H. Information Technology

- CBP Directive 5510-039, Local Area Network Standards and Backups (August 23, 2004). The OIT Infrastructure Services Division shall maintain the local area network (LAN) design and configuration standards document and the CBP cabling standards. This Division also shall provide supervision for all LAN installations on the CBP Network.

I. Security

The DHS Management Directive 11030.1, Physical Protection of Facilities and Real Property (April 21, 2003). This includes general requirements for perimeter walls, perimeter doors, secure storage rooms, weapons and ammunition storage, reception/clerical areas, cleaning force/answering service, and evidence
vaults. All security features shall comply with the latest edition of the CBP Security Policy and Procedures Handbook (SPPH).

J. Detention Facilities and Standards to Prevent, Detect, and Respond to Sexual Abuse and Assault in Confinement Facilities

CBP Directive 3340-030B, Secure Detention, Transport and Escort Procedures at Ports of Entry (August 8, 2008), which includes general considerations for detention conditions in compliance with the latest edition of the SPPH. The Port Security Assessment Coordinator will ensure design efforts for new construction and renovation of detention facilities comply with:

3. CBP has a zero-tolerance policy (ZTP) prohibiting all forms of sexual abuse and assault of individuals in CBP custody, including holding facilities, during transport, and during processing. CBP is committed to protecting the safety of individuals in CBP custody. CBP policy provides effective safeguards against sexual abuse and assault for individuals in CBP custody.

K. Accessibility

The Architectural Barriers Act Accessibility Standard (ABAAS), 36 C.F.R. Part 1191, Appendices C and D, applies to federal construction begin after May 8, 2006. Areas occupied exclusively by CBP do not have to be ABAAS-compliant.

Note: At the direction of the OFO, accessibility requirements for some spaces may be waived based on access limited to able-bodied CBP officers. Accessibility should be provided except where the requirements conflict with the security or mission-critical functions of CBP-controlled spaces.

L. Firearms

Customs Handbook HB 4500-01C.

M. Metric System

Executive Order 12770, Metric Usage in Federal Government Programs, 56 Fed. Reg. 35801 (July 25, 1991). This executive order requires federal departments and agencies to implement metric usage in procurements, grants, and business-related activities.

N. Narcotic Storage

United States Department of Justice, Drug Enforcement Administration, 21 C.F.R. §§ 1301.72 - 1301.76

1.9 ADDITIONAL DOCUMENTS

In addition to this Standard, the CFO shall adhere to the latest edition of the following documents in force on the date of issuance of an RFP for design-build projects and the date of contract award with A/Es for design-bid-
build projects except where CBP requirements are more stringent. Deviations must be presented to and
approved in accordance with the FOF Project Change Management Process (FOF-0300-CMP). Further details
can be found in this Standard, Section 1.2.6, Alternate or Equivalent Means, Exceptions, and Deviations.

A. The POR: Each project will be defined in a written document approved by CBP for individual port
construction projects, including space requirements, time schedules, and other specific requirements unique
to that individual project.

B. Standards for Rehabilitation and Guidelines for Rehabilitating Historic Structures (issued by the Secretary
of the Interior): This document defines the procedures and requirements of federal agencies when dealing
with historic structures. See 36 C.F.R. Part 67-68.

C. State Department of Transportation Standards: Reference the roadway designs published by the local State
Department of Transportation (DOT). All traffic circulation and routing signage shall follow the criteria
contained in the Manual on Uniform Traffic Control Devices (MUTCD) adopted by the DOT in the state each
project is located.

D. State and local codes, where applicable: refer to Section 1.8.1. Applicability of Building Codes and Zoning
Laws.


F. Federal Acquisition Regulation (FAR).

G. Department of Justice (DOJ): reference physical security standards, including forced entry, bullet resistance,
and secure storage classifications, to be coordinated with CBP SPPH requirements.


1.10 FACILITY PLANNING AND DESIGN CONTACTS

Questions regarding this Standard and related facility planning and design requirements shall be
directed to OFAM, FOF PMO, Design Analysis and Engineering at
DesignStandardsFOF@cbp.dhs.gov.
CHAPTER 2 - CARGO FACILITIES PLANNING AND PROGRAMMING

2.1 INTRODUCTION

This chapter provides an overview of the project implementation process for U.S. Customs and Border Protection (CBP) facilities at cargo facilities, including centralized examination stations (CESs), bonded warehouses, cargo warehouses, air cargo, seaport cargo, foreign trade zones, intermodal yard, and cargo inspection facilities. Cargo facility operators (CFOs) considering the construction of a new cargo facility, remodeling, consolidating, expanding, modifying, or relocating an existing cargo facility, shall involve CBP during the early stages of project planning. CBP makes the final determinations regarding space and equipment necessary to provide CBP services at a new facility. Early and continuous communication will prevent design problems that result in costly project delays.

Project approval, including all design approvals and notices to proceed on any work within the scope of the project, shall be obtained by the Field Operation Facilities Program Management Office Project Manager (FOF PMO PM). During a project, no other CBP entity has the authority to approve or convey work requested by the CFO. A CBP design and construction review process is required to ensure the necessary project development milestones are met. Refer to Section 2.4, Project Development, Review, and Approval Phases for further details.

The construction of a new facility or modification of an existing facility shall be approved in writing by the FOF PMO PM before CBP processing begins. Failure by the CFO to obtain CBP approval may result in the suspension of CBP operations.

2.2 ROLES AND RESPONSIBILITIES

2.2.1 Communications with CBP

The CFO shall work with the CBP field office in coordination with the Office of Field Operations (OFO) Programs to determine the base facility requirements. Once OFO grants approval for the CFO’s facility request, the FOF PMO assigns a FOF PMO PM. The FOF PMO PM maintains project management authority over project development and coordinates with other CBP program representatives, including the CFO, OFO, Office of Facilities and Asset Management (OFAM), Office of Professional Responsibility (OPR), Office of Information and Technology (OIT), and other stakeholders, as required. The CFO can only receive written approval from the FOF PMO PM. This communication continues throughout the entire process and is necessary for changes.

Changes or requests for deviation shall follow CBP procedures, per Section 1.2.6, Alternate or Equivalent Means, Exceptions, and Deviations.

The roles and responsibilities of various CBP offices and management staff in designing a cargo facility are provided in Table 2-1 on the next page.
Table 2-1 CBP Roles and Responsibilities

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| Port Director      | • Receives application for project.  
                        • Verifies necessary documentation is provided.  
                        • Notifies the field office immediately of potential project.  
                        • Conducts feasibility review with the field office.  
                        • Passes application to the field office. |
| Field Office       | • Notifies the OFO Facilities and Technology Division (F&TD) immediately of potential project.  
                        • Conducts feasibility review.  
                        • Reviews application for operational requirements, staffing, and budget.  
                        • Submits the field facility request (FFR) to the OFO F&TD for approval. |
| OFO F&TD           | • Appoints the OFO program manager (PgM).  
                        • Notifies the FOF PMO of approval.  
                        • Refines program of requirements (POR) with the field office/port director (PD) if there are any unresolved issues.  
                        • Coordinates requirements among the OFO stakeholders. |
| FOF PMO            | • Appoints the FOF PMO PM.  
                        • Coordinates all communication after application is submitted.  
                        • Interfaces with the OFO PgM. |
| FOF PMO PM         | • Coordinates CBP requirements.  
                        • Coordinates design reviews with CBP stakeholders through all phases of design.  
                        • Coordinates construction administration and project closeout.  
                        • Acts as the sole point of contact with the CFO on behalf of the OFO, OIT, OPR, and OFO F&TD.  
                        • Processes change requests (CR) (with approval from the FOF PMO and OFO leadership for high-level requests).  
                        • Interfaces with the OFO PgM.  
                        • Disseminates technical requirements related to CBP. |

2.3 PROJECT IMPLEMENTATION PROCESS

2.3.1 Alternate Delivery Methods

The CFO should execute projects using traditional design-bid-build and design-build delivery methods. The CFO shall work with CBP to ensure the information provided is relevant for the selected delivery method. Project delivery methods may vary from the traditional methods noted below based on the CBP requirements of the CFO.
A. Design-Bid-Build

Design-bid-build delivery is defined by its separation into three distinct phases:

1. Programming, facility design, and design documentation.
2. Competitive bidding and negotiation.
3. Construction by a general contractor.

For cargo facility projects, the CFO shall be directly engaged with the architect/engineer (A/E) team to program, plan, design, and produce full construction documentation of CBP spaces. CBP shall also work with the CFO to ensure that the facility meets CBP minimum standards during the construction process and through acceptance and occupancy.

This method allows greater collaboration between CBP Stakeholders, the CFO, and the A/E team after concept design. This promotes continuity from beginning to end.

B. Design-Build

With design-build delivery, CBP shall provide a copy of this Standard and the CBP Signage Design Standard, through the FOF PMO PM, to be included in the Request for Proposal (RFP) package to solicit bids from design-build teams. CBP may retain an independent A/E to assist in reviews and provide technical advice during the subsequent construction document development and construction administration phases.

It is also comprised of three phases, but the CFO bids the project at an earlier stage:

1. Programming and concept design.
2. Competitive bidding and negotiation.
3. Design documentation and construction.

2.4 PROJECT DEVELOPMENT, REVIEW, AND APPROVAL PHASES

This section provides an overview of the project implementation process at cargo facilities and the design and construction review process.

Cargo facility design should include steps that are coordinated between the CFO and CBP. This coordination ensures that all CBP operational requirements have been identified and incorporated into CBP approved designs, and subsequently implemented during construction to the satisfaction of CBP for commissioning and occupancy.

The development of a cargo facility project includes the following steps in the design process and is coordinated between the CFO and CBP.

The project implementation process consists of the following sequence of phases:

A. The CFO determines industry need.
B. CBP approval of the CFO project.
C. Pre-design and programming phase.
D. Schematic design phase.
E. Bidding and negotiation phase (design-build).
F. Design development phase.

G. Construction documents phase.

H. Bidding and negotiation phase (design-bid-build).

I. Construction phase.

J. Acceptance.

K. Beneficial occupancy and project close out.

2.4.1 Project Implementation Phases

In the early planning stage, OFO will develop a POR for a project. The POR outlines the minimum space type and size required for CBP to operate at the facility. The OFO will coordinate with FM&E to finalize the POR, after which the project will be assigned to the FOF PMO PM for execution. The POR will then be shared and coordinated with the CFO. The local port of entry (POE) provides cargo volume projections to assist in developing the POR. The CFO shall work with CBP to ensure the information provided by all parties is relevant to the selected delivery method. Cargo facilities requires permanent operational space provided and maintained by the CFO at no cost to CBP.

Cargo facilities shall comply with applicable CBP standards in place at the time of construction document approval. Absent extraordinary circumstances, CBP will not require new standards or operational changes that can impact the building after providing written plan approval to the CFO, provided the CFO completes the construction of the CBP area per originally approved documents within a reasonable (less than two years from the start of construction) time frame.

The FOF PMO PM will remain CBP’s sole point of contact throughout the project. The FOF PMO PM coordinates with OFO management (at the port, field office, and F&T D) during each phase. The CFO, A/E, and CFO’s contractor(s) shall only take direction from CBP through the FOF PMO PM.

Regarding the project phase submissions outlined below, the A/E should refer to Appendix C for complete submittal requirements. These submittals are required for CBP stakeholders to ensure CBP requirements are met and the project planning, design, and construction phases are progressing.
1 A. Cargo Facility Operator Determines Industry Need

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibility</th>
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</table>
| CFO                | The CFO submits a request to construct/renovate port space at a cargo facility and a business plan to CBP. The typical request and/or business plan should include the following information, to be provided to the PD by the CFO.  
  - Full description of cargo facility.  
  - Summary of cargo operations/intended facility managers and carriers.  
  - Estimated volume of transactions.  
  - Application processing fee.  
  - List of principal company officials.  
  - Projected start-up date and hours of operation.  
  - Signed agreement(s) between CFO and CBP. |

2 B. CBP Approval of the CFO Project

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| Director, Field Operations | Reviews and coordinates the CFO request within CBP.  
  - Determines operational and logistical feasibility.  
  - Provides formal determination and notification of project approval to the CFO. |
| OFO Field Office   | Provides the project understanding agreement (PRUA) with the CFO who, in turn, reviews, signs, and returns the PRUA to OFO Field Office.  
  - Identifies the field office project points of contact. |
| OFO F&TD           | Provides the OFO program level oversight, coordination, and reporting functions.  
  - Identifies minimum project operational and space requirements; coordinates cross CBP programs; and provides OFO policy clarifications, as needed, via written request for assignment of a FOF PMO PM to oversee and execute the project.  
  - Approves the FFR.  
  - Notifies the FOF PMO of project and required operational details through memorandum. |
| FOF PMO            | Provides the OFAM program level oversight, coordination, and reporting functions.  
  - Issues this Standard and other applicable standards to the CFO.  
  - Assigns an FOF PMO PM. |
C. Pre-Design and Programming Phase

This phase comprises preliminary site planning and analysis, detailed programming, and concept development. Site planning and analysis shall refine the preferred configuration, placing all site elements and buildings with respect to each other, and security parameters. The program is expanded from the POR to include detailed information for each function and space based on this Standard and further collaboration with the stakeholders and project team(s).

The initial project kick-off meeting between CBP, the CFO, and the A/E serves as the event when the A/E receives the necessary direction from the CFO to begin the planning, programming, and design for a new facility or a facility renovation. The CFO should contact CBP during these early phases to validate space requirements and to advise of special situations that may require alternate or equivalent means, exceptions, or deviations from this Standard. The design review process will be established for each project at this initial meeting.

### Role | Responsibility
---|---
Field Office | • Develops and finalizes the POR, including all required facilities, spaces, technologies, and infrastructure needed for CBP to perform its duties.  
| | • Submits the POR to F&TD.  
| | • Receives cost sign-off (CSO) from OIT.  
| | • Coordinates with the FOF PMO PM to document the CFO’s agreement to reimburse CBP for those costs.  
F&TD | • Assists the field office with finalization of the POR and provides validation.  
OIT | • Conducts the network analysis based on anticipated operational requirements for the development of the CSO.  
| | • Develops and submits the CSO to the field office and FOF PMO PM.  
| | • Reviews the CFO’s agreement to reimburse CBP for accuracy.  
| | • Purchases and installs items duly identified and for which the CFO has agreed to pay reimbursement to CBP.  
FOF PMO PM | • Coordinates with the CFO’s A/E in close coordination with OFO for site-specific/design considerations.  
| | • Schedules required CBP reviews and acceptances.  
| | • Coordinates and seeks approvals from CBP on:  
| | • Functional adjacency.  
| | • The OPR Security Management Division (SMD) threat-based assessment.  
| | • Concept development.  
| | • Facility long-term master plan (typically 10 years).
### D. Schematic Design Phase

Site development is key to a successful cargo facility. Emphasis is placed on site planning during the schematic design phase. Buildings, structures, roadways, parking areas, and freestanding monitoring equipment should be situated to ensure proper site security, functional interrelationships, and vehicle/pedestrian processing.

Schematic design advances the blocking diagrams, delineating the adjacencies, circulation, and spatial aspects within each functional area, and combining the functional areas into a coherent plan. Building sections and exterior elevations options are studied.

The schematic design phase is the first design phase for larger projects. For minor projects, the schematic design phase tasks may be combined with design development into a single design phase.

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<table>
<thead>
<tr>
<th><strong>FOF PMO</strong></th>
<th>Provides OFAM program level oversight, coordination, and reporting functions.</th>
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</thead>
<tbody>
<tr>
<td><strong>OGA</strong></td>
<td>Provides planning and programming input to ensure adequate facility design.</td>
</tr>
<tr>
<td><strong>CFO</strong></td>
<td>Returns completed free space questionnaire to the FOF PMO PM. It begins project pre-design and programming upon approval from the FOF PMO PM. It coordinates with the FOF PMO PM for requirements, reviews, and approvals. It prepares project schedule.</td>
</tr>
</tbody>
</table>

- Identifies other agencies involved in CBP Security Area (CSA) facility once CBP approves project.
- Coordinates with the CFO in close coordination with the field office, F&TD, and other government agencies (OGA) (to conduct required reviews and approvals of planning documents).
- Receives the CSO from the OIT and coordinates with the Field Office to document the CFO’s agreement to reimburse CBP for those costs.
- Ensures design compliance with the POR.
- Ensures all project and pre-design phase approvals are completed before schematic design development.
- Provides the CFO with questionnaire for CBP free space lease at project kick-off meeting. The FOF PMO PM will follow the guidance in workflow project manager lease preparation process.
### E. Design Development Phase

<table>
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<tr>
<th>Role</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td><strong>A/E</strong></td>
<td>• Begins the 30% design development phase upon receiving written approval from the FOF PMO PM.</td>
</tr>
<tr>
<td></td>
<td>• Coordinates with the FOF PMO PM for reviews and approvals.</td>
</tr>
<tr>
<td></td>
<td>• Develops a 30% design submission incorporating, but not limited to, the following: floor plans, elevations, reflected ceiling plans, site plan, outline specifications, finish schedule, single-line diagrams for all building systems, security systems, building sections, wall sections, and special construction requirements. Security systems layout shall identify all locations of proposed security devices.</td>
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<tr>
<td></td>
<td>• Shall refer to Appendix C for design development submittal requirements.</td>
</tr>
<tr>
<td></td>
<td>• Ensures completion of 30% design package.</td>
</tr>
<tr>
<td></td>
<td>• Distributes the 30% design package to the FOF PMO PM for review.</td>
</tr>
<tr>
<td><strong>FOF PMO</strong></td>
<td>• Provides the OFAM program level oversight, coordination, and reporting functions.</td>
</tr>
<tr>
<td><strong>FOF PMO PM</strong></td>
<td>• Coordinates with the CFO’s A/E and OFO to conduct required CBP stakeholder schematic design reviews.</td>
</tr>
<tr>
<td></td>
<td>• Collects comments from CBP stakeholders to ensure implementation of the POR, to address site-specific/design considerations, and to ensure compliance with design standards.</td>
</tr>
</tbody>
</table>
CBP spaces are reviewed in detail for operational, technical, security, and functional requirements.

F. Construction Documents Phase (60% through Final Design)

The 60% design phase is comprised of several submittals, including but not limited to complete drawings and specifications necessary to document the construction requirements for the project.

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td>A/E</td>
<td>• Begins the 60% design phase upon receiving written approval from the FOF PMO PM.</td>
</tr>
<tr>
<td></td>
<td>• Coordinates with the FOF PMO PM for reviews and approvals from the 60% review through final design documents.</td>
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<td>• Reconciles all review comments.</td>
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<tr>
<td></td>
<td>• Ensures completion of construction documents.</td>
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<td></td>
<td>• Distributes the design documents to the FOF PMO PM for review.</td>
</tr>
<tr>
<td>FOF PMO</td>
<td>• Provides the OFAM program level oversight, coordination, and reporting functions.</td>
</tr>
<tr>
<td>FOF PMO PM</td>
<td>• Coordinates with the CFO’s A/E and OFO to conduct required CBP stakeholder 60% design reviews.</td>
</tr>
<tr>
<td></td>
<td>• Collects comments from CBP stakeholders to ensure implementation of the POR, to address site-specific/design considerations, and to ensure compliance with design standards. CBP spaces are reviewed in detail for operational, technical, security, and functional requirements.</td>
</tr>
<tr>
<td></td>
<td>• Retains oversight authority for the project and provides close coordination with the PD, PD-designated point of contact, or other CBP representatives.</td>
</tr>
</tbody>
</table>
### G. Bidding and Negotiation (Design-Bid-Build)

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<tr>
<th>Role</th>
<th>Responsibility</th>
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</thead>
</table>
| CFO                   | • Proceeds with the bidding and award for construction of the project upon receiving written approval from the FOF PMO PM.  
                        | • Develops statement of work and solicitation documents including the completed drawings, specifications, and instructions for bidders and the bid form.  
                        | • Begins the construction phase and coordinates with CBP for site visits/reviews and approvals. Any deviation from CBP-approved construction documents shall be reported to the FOF PMO PM for approval. |
| FOF PMO               | • Provides the OFAM program level oversight, coordination, and reporting functions.                                                            |
| A/E                   | • Answers requests for information (RFI) during the bidding period that are related to non-CBP requirements.                                   |
| FOF PMO PM            | • Answers the RFIs during the bidding period that are related to CBP requirements.  
                        | • Notifies CBP stakeholders of the following items related to the CFO’s construction contract award:  
                          • Bidding/negotiating update.  
                          • Contract award update.  
                          • Construction phase kick-off meeting.  
                          • Construction schedule/milestones.  
                          • Site visit(s)/inspection(s). |

### H. Construction Phase

<table>
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<tr>
<th>Role</th>
<th>Responsibility</th>
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</table>
| General Contractor    | • Coordinates the construction phase kick-off meeting. At this meeting the CFO personnel, CBP stakeholders, A/E or construction manager, and general contractor establish the baseline schedule and major milestones.  
                        | • Submits project-related submittals, including, but not limited to shop drawings, product samples, and mock-ups to the A/E and FOF PMO PM for review. |
| A/E                   | • Reviews project related submittals.  
                        | • Responds to RFIs related to non-CBP requirements.                                                                                           |
| CFO                   | • Submits requests for any deviations from the approved construction documents for CBP spaces, either built or proposed, to the FOF PMO PM. |
• Provides deviations to the FOF PMO PM for review, direction, and approval. The deviation process for proposed changes is discussed in Chapter 1.

FOF PMO PM

• Ensures the general contractor receives a notice to proceed from the CFO prior to start of construction.
• Resubmits the final construction drawings and schedule for review and approval by CBP stakeholders if construction does not start and/or maintain acceptable progress within 12 months from the notice to proceed.
• Finalizes free space lease with the CFO and appropriate CBP contracting personnel prior to the start of construction.
• Reviews project related submittals.
• Submits project change requests for any CBP user requested deviations or scope changes to the CFO.
• Responds to the RFIs related to CBP requirements.
• Schedules site visits during the construction phase with CBP stakeholders.

OPR

• Inspects and approves all strong and hardened rooms during construction before final wall installation.

### I. Acceptance

<table>
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<tr>
<th>Role</th>
<th>Responsibility</th>
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</table>
| General Contractor | • Notifies the CFO of substantial completion.  
• Generates and addresses open punch-list items.  
• Confirms with CBP stakeholders that punch-list items have been corrected and adds punch-lists items as warranted.  
• Schedules and coordinates final inspection, testing/commissioning, and training with CBP and CFO to ensure satisfactory completion of all outstanding items and facility compliance with CBP standards. |
| CFO             | • Notifies the FOF PMO PM when the facility is ready for final inspection.  |
| FOF PMO PM      | • Schedules final inspection with CBP stakeholders for generation of CBP punch-list items (both construction and CBP related issues).  
• Verifies resolution of CBP and general contractor punch-lists items. |
| OPR             | • Verifies that systems comply with CBP standards, are programmed and configured properly, and are fully operational, including but not limited to intrusion detection system (IDS), access control system (ACS), duress system, and closed-circuit television (CCTV) systems. |
Fire Protection Engineer or Authority Having Jurisdiction

- Issues a certificate of occupancy to the CFO once the regional fire protection engineer has determined to the best of his/her knowledge that all fire protection and life safety systems have been completed, inspected, successfully tested, and approved, and all outstanding fire and life safety deficiencies have been corrected to afford a reasonable degree of safety to the building occupants from fire and similar emergencies. No portion of a cargo facility project may be occupied until the regional fire protection engineer has issued a certificate of occupancy to the CFO.

## J. Beneficial Occupancy and Project Close-Out

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibility</th>
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</thead>
<tbody>
<tr>
<td>General Contractor</td>
<td>• Provides the CFO with all pertinent operations and maintenance (O&amp;M) information/manuals and electronic as-built documentation.</td>
</tr>
<tr>
<td></td>
<td>• Transfers warranties to the CFO.</td>
</tr>
<tr>
<td>A/E</td>
<td>• Reviews and validates all as-built drawings.</td>
</tr>
<tr>
<td>CFO</td>
<td>• Submits all the O&amp;M information/manuals and electronic as-built documentation to the FOF PMO PM.</td>
</tr>
<tr>
<td>FOF PMO PM</td>
<td>• Notifies the FOF PMO Program Implementation Branch (PIB) leasing team of final acceptance.</td>
</tr>
<tr>
<td></td>
<td>• Enters facility data into CBP’s facilities database.</td>
</tr>
</tbody>
</table>

*Note: Processes and responsibilities may vary depending on project scope and requirements. It is strongly recommended that the A/E consult with CBP early in the planning stages of any project.*

### 2.4.2 Post Occupancy

The CFO and OFO shall conduct a post-occupancy evaluation at approximately two months following occupancy to ensure that all punch-list items have been addressed and to address any new issues, such as latent defects. Prior to the post-occupancy inspection, the CFO shall address all punch-list items to CBP’s satisfaction. When CBP occupancy is complete and the facility is in operation, facility strategic resource and condition assessments may occur at periodic intervals.

### 2.5 PROJECT IMPLEMENTATION PROCESS – CENTRALIZED EXAMINATION STATIONS

This section provides an overview of the project implementation process at a CES and the design and construction review process.

The design of a CES shall comply with the solicitation package criteria and the requirements in this Standard. The OFO may specify space requirements for a particular location based on anticipated volumes, entries, and threat assessments. Therefore, CBP should be given the opportunity to build-out a representative POR that meets the OFO’s operational needs.
Upon tentative selection by CBP, the CES operator shall coordinate specific requirements regarding non-intrusive inspection (NII), physical security, agriculture inspections, data and voice requirements, and support spaces, with the specific CBP program offices. Coordination shall be conducted through the FOF PMO PM.

2.6 PROJECT IMPLEMENTATION PROCESS – OTHER CARGO FACILITIES

This section provides an overview of the project implementation process at foreign trade zones (FTZs), intermodal yards, seaport container terminals, and air cargo facilities.

The design of a cargo inspection facility shall include steps that are coordinated between the CFO and CBP. This coordination ensures that all CBP operational requirements have been identified and incorporated into CBP approved designs and implemented during construction to the satisfaction of CBP for commissioning and occupancy.

Cargo inspection spaces require appropriate accommodations for equipment, laydown area, controlled access, storage and cargo detention. During project planning and design, CBP specifies space, power, security, and any special inspection processes/equipment requirements.

2.7 FUNDING RESPONSIBILITY

CBP requires a cargo facility, with a secure perimeter, to be provided, adequately maintained, and equipped by the CFO to support CBP’s operational requirements, as free space, per applicable laws, regulations, and policy. Refer to this Standard, Section 1.6.

CBP space will be complete with operational space for cargo examination, enforcement, secured storage, adequate office space, equipment, furnishings, and parking spaces ready for occupancy and fully operational. The CFO shall provide a complete and fully operational space within the cargo facility for CBP’s sole occupancy and use.

For computers and other equipment, CBP shall acquire the facility-specific equipment, once the CFO indicates its agreement to reimburse these costs through a Reimbursable Memorandum of Agreement (RMOA). The CFO shall be responsible for the actual acquisition costs through reimbursement to CBP. Coordination with CBP at the early stages of the planning process is required to validate requirements and receive advice on special situations. The CFO shall provide, at no cost to the government:

- Water, gas, electricity, and refuse collection.
- Telephone and data connectivity.
- Security monitoring.
- Antennas.
- Extra utility fees for overtime use.

The federal inspection services (FIS) are furnished by the government at no cost to the CFO, with certain exceptions.

The design and construction of the spaces within the secure perimeter of a cargo facility and other related areas controlled by CBP (i.e., the CSA) shall be approved in writing before CBP begins operations.

CFDS – 2019– FACILITIES PLANNING

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. § 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with DHS policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid “need-to-know” without prior approval of an authorized DHS official.
Table 2-2 Funding Responsibility for CBP Cargo Facilities and Equipment

<table>
<thead>
<tr>
<th>SCOPE ITEM</th>
<th>FUNDING RESPONSIBILITY</th>
<th>OPERATOR/PORT AUTHORITY</th>
<th>MAINTENANCE &amp; REPAIR</th>
</tr>
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<tr>
<td>Building(s) and Systems</td>
<td>CFO</td>
<td>CFO</td>
<td>CFO</td>
</tr>
<tr>
<td>NII Equipment</td>
<td>CBP/CFO*</td>
<td>CBP/CFO*</td>
<td>CBP/CFO*</td>
</tr>
<tr>
<td>IT Equipment</td>
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<td>CBP/CFO*</td>
<td>CBP/CFO*</td>
</tr>
<tr>
<td>IT Infrastructure Buildout</td>
<td>CFO</td>
<td>CFO</td>
<td>CFO</td>
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<tr>
<td>Casework</td>
<td>CFO</td>
<td>CFO</td>
<td>CFO</td>
</tr>
<tr>
<td>Fixed Furniture and Cubicles</td>
<td>CFO</td>
<td>CFO</td>
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</tr>
<tr>
<td>Loose Furniture</td>
<td>CFO</td>
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<td>Shelving</td>
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<td>Enforcement Computers</td>
<td>CBP/CFO*</td>
<td>CBP/CFO*</td>
<td>CBP/CFO*</td>
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<td>Physical and Electronic Security</td>
<td>CFO</td>
<td>CFO</td>
<td>CFO</td>
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<tr>
<td>Other Equipment</td>
<td>CBP/CFO*</td>
<td>CBP/CFO*</td>
<td>CFO/CBP CBP/CFO/CFO*</td>
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<tr>
<td>CBP Software</td>
<td>CBP</td>
<td>CBP</td>
<td>CBP</td>
</tr>
</tbody>
</table>

* Per the RMOA, CBP is responsible for the purchase, installation, and maintenance / repair of IT, NII, and other equipment category. Per the RMOA, the CFO is responsible for reimbursing CBP for the purchase, installation, maintenance, and repair of these items.

2.8 PROJECT PLANNING AND PROGRAMMING

2.8.1 Planning Considerations

This section identifies a number of major factors that shall be taken in to consideration when planning a cargo inspection facility project, including but not limited to site planning, traffic planning, expansion, and interior space planning. All factors shall be planned within the overall constraints of cargo inspection facility security and the CBP mission.

A. Site Planning

With the exception of interior renovations, all projects will have some impact on the cargo facility site. Therefore, projects require careful coordination with the approved master plan for each cargo facility. See Chapter 4, Site Planning, for complete requirements regarding design requirements for cargo facility sites.

B. Security Planning

Security planning is a crucial part of planning a cargo facility. The goal for security planning at a cargo facility is to protect CBP personnel, facilities, and property. Security site and building planning employ both passive and active elements. Passive elements may include setbacks, non-straight drive aisles, strategic placement of buildings and site features, hardened construction, and sightlines. Active elements may include video surveillance, operable gates, electronic key control, and intruder detection systems. The physical security measures required in this Standard are intended to be used in conjunction with the...
established operating policies, procedures and practices of CBP. Site security considerations are discussed in Chapter 4. General physical security planning is discussed in detail in Chapter 21. The OPR SMD specialist will confirm all security solutions. Access to areas within the CBP perimeter are determined and controlled by CBP.

C. Expansion

Site planning and building design shall incorporate potential expansion to accommodate future growth and changing programs, for both temporary operational build-up and permanent facilities. Areas designated for expansion shall include, but are not limited to an additional lane for each vehicle type, parking, and an additional NII. Potential building expansion shall be identified by the CFO and approved by CBP. Permanent expansion can displace other site elements, such as existing parking, while temporary build-up shall be designated in open areas. In some circumstances, it may be appropriate to identify adjacent property that may be available for purchase or lease to accommodate growth at the site.

2.8.2 Programming Considerations

A. Space Programming

This Standard provides descriptions of the internal processes and adjacencies for each of the major cargo facility components and their functional areas. The space requirements matrix identifies rooms and minimum square footage for each area. This information is used throughout the development of the project from creation of the POR, to the development of the feasibility study, and into the pre-design and programming phase.

B. Space Requirements Matrix

A space requirements matrix is included in each major component section. The matrix features a comprehensive list of spaces and rooms grouped in functional areas that may be required for a particular cargo facility component or subcomponent, assigning each space minimum square footage requirements, quantity, and a reference key to its data sheet.

CBP will provide a POR for the specific cargo facility. Not all spaces in this Standard will be required at every cargo facility.

C. Room Data Sheets

Room data sheets are provided for each space or room. These data sheets identify specific criteria for a space, including but not limited to adjacencies, size, occupancy, security requirements, and fixed equipment. The A/E should refer to Chapter 22 for room data sheets.

D. Space Measurement

The minimum area requirements provided in this Standard are for planning purposes and represent the usable area required within the room. The actual space may vary by a small amount to allow for minor column protrusions, chases, or other construction features that can affect the precise configuration and resultant area of the space.
2.9 NON-CBP ENTITIES HOUSED AT CARGO FACILITIES

Non-CBP entities include OGAs, non-federal agencies, and other approved entities. Required spaces may include inspection and laboratory spaces, operational support, office and public interface spaces, typically housed in the cargo facility or independent buildings elsewhere on the site. CBP shall approve all non-CBP entities housed at a cargo facility. CBP shall approve the location and configuration of non-CBP space consistent with access, security needs, and the mission of the cargo facility.

Where possible, non-CBP entities shall share building and site systems and common support spaces. Occasionally, agencies may request approval of their own dedicated spaces that will duplicate that of a collocated agency.

Federal agencies may include, but are not limited to U.S. Immigration and Customs Enforcement (ICE), U.S. Department of Agriculture (USDA) Animal and Plant Inspection Services Veterinary Services (APHIS VS), General Services Administration (GSA), U.S. Food and Drug Administration (FDA), U.S. Fish and Wildlife Service (FWS), U.S. Department of Health and Human Services (HHS), Center for Disease Control and Prevention (CDC), U.S. Public Health Services (PHS), and Federal Motor Carrier Safety Administration (FMCSA). CBP offices may include U.S. Border Patrol, Air and Marine Operations, or Office of Biometric Identity Management (OBIM). Non-federal agencies may include departments of transportation (DOTs), highway patrol, or local law enforcement.

The OFO, in coordination with the FOF PMO PM, will contact each of the OGAs during the pre-design and programming phase. The OGAs will determine if they must have a presence at the cargo facility. The OGAs will provide input on space and adjacency requirements for inclusion into the overall program and concept plan. The FOF PMO PM shall provide design and construction documentation submissions for review and comments to the other agencies and offices at each phase.

2.10 GOVERNMENT FURNISHED EQUIPMENT

In cargo facilities in which the CFO provides free space to CBP, all equipment necessary to meet CBP’s operational requirements must be provided by the CFO. All systems and equipment identified in Chapter 22, Room Data Sheets, and described in the appendices as “CBP Equipment” are to be funded by the CFO, procured by CBP, then reimbursed by the CFO.

Coordination with CBP at the early stages of the planning process is essential and mandatory to validate and incorporate into the planning and design the spatial requirements, power and other service requirements, and relationships to other facility systems and equipment.

2.11 FURNITURE, FIXTURES AND EQUIPMENT

The room data sheets list furniture, fixtures, and equipment to assist in space planning and programming. The design configurations of rooms shall accommodate all items listed in these categories regardless of provenance. Associated mechanical, electrical, and plumbing service requirements shall be provided in the programming and planning documents.
SITE LAYOUT

Cargo Facilities Design Standard
2019 (Draft)

U.S. Customs and Border Protection
CHAPTER 4 – SITE PLANNING

4.1 INTRODUCTION

Cargo facilities operate out of existing, pre-determined, U.S. Custom and Border Protection (CBP) approved facility site layouts. Cargo facility expansion, and concurrent expansion of space provided to CBP by the cargo facility operator (CFO), will impact the existing site. Prior to the expansion of a cargo facility, the CFO must coordinate CBP parking as well as the proximity or adjacency of multiple CBP spaces.

4.2 SITE AND FACILITIES LAYOUT PLANNING CONSIDERATIONS

A number of factors pre-determine the location and configuration of cargo facilities. Prior to finalizing the selection of a new location or expanding an existing one, early involvement and coordination with CBP is required. Physical site features shall meet the program of requirements (POR).

4.2.1 Site Master Plan

CBP shall be consulted by the CFO during master plan update reviews that may affect CBP space, operations, or security. Planning shall include areas for current functions and the ability to expand to meet future growth. CBP recommends master plan update reviews for each cargo facility every three to five years, on a recurring basis.

Other parameters that shall be considered include legal restrictions, local government coordination, environmental issues, emergency services, and parking.

4.2.2 Applicable Legal Authorities and Policy Guidance

All cargo, merchandise, packages, shipments, and baggage arriving in, or departing from, the United States is subject to inspection, search, and examination by CBP, pursuant to laws, regulations, and policy. Refer to this Standard, Chapter 1, Section 1.6.

4.2.3 Local Government Coordination

Cargo facility planning must respect local government’s future and existing infrastructure. The CFO must coordinate with the city or state department of transportation during the planning phase.

4.2.4 Emergency Services and Fire Apparatus Access

The site must allow for emergency vehicle access, including fire department vehicles, in accordance with local codes, International Code Council-International Fire Code (ICC-IFC), National Fire Protection Association (NFPA) 241, and NFPA 1141.

4.2.5 Site and Parking Considerations

The CFOs shall provide parking for government owned vehicle(s) (GOVs) used in CBP Operations. The GOV parking spaces shall be located in the immediate vicinity of the cargo facility. CBP Officers in their official duties shall not have to travel through a public area to access GOV parking spaces. The GOV and United States Immigration and Customs Enforcement (ICE)(where present) parking area shall have an access control device approved by the local CBP. Parking for GOVs shall be provided at no cost to the government. The GOV parking spaces shall be segregated from public parking areas. The CFOs shall provide a designated parking area with...
an access control device, approved by the local CBP. To ensure the safety of CBP Officers, the route to access
the parking area shall be well-lighted, a reasonable distance to the facility, and approved by CBP officials. Remote
or off-site parking requiring CBP Officers to use shuttle transportation is not acceptable; CBP officers may need
to move in and out of a facility several times during a typical day or be required to work at night. Remote parking
can adversely affect operational efficiency. Coordination with the Office of Field Operations (OFO) is required
to determine the specific number and location of spaces. Final determination is provided in the program of
requirements (POR).
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CHAPTER 5 – CARGO FACILITY DESIGN

5.1 INTRODUCTION

This chapter, and the specific facility/terminal chapters noted below, describes the design, programming, and construction requirements for U.S. Customs and Border Protection (CBP) cargo facilities, including CBP security areas (CSAs), operational support spaces, and other related areas. The requirements are applicable to CBP inspection spaces at airports, seaports, and rail line depots in the United States, including:

- Centralized examination stations (CES).
- Cargo Warehouses.
- Air Cargo Facilities.
- Sea Cargo Terminals.
- Foreign Trade Zones (FTZs).
- Intermodal Yards.

The application of this Standard, combined with strict security controls, will facilitate the movement of all international cargo directly to the inspection area for CBP processing.

This Standard guides the cargo facility operators (CFOs) and architects/engineers (A/E's) in planning cargo inspection facilities compliant with CBP operational, security, and inspection requirements.

This chapter describes the authority for provision of cargo facility CSA space, including:

- CBP cargo processing areas.
- Processing support spaces.
- Operational support spaces.
- Other CSA areas.

The following chapters apply to new and expansion construction and renovated cargo facilities at airports, seaports, the CES, the FTZs, cargo warehouses, and rail line depots in the United States.

5.1.1 Space Requirements

General space requirements for new and expansion construction and renovated facilities are provided in the facility chapters. The amount of space and operational requirements are site-specific per CBP operational needs and defined by the project program of requirements (POR). Refer to the detailed room requirements in Chapter 22, Room Data Sheets. The CFO is required to contact CBP during the early project concept phase for guidance and CBP approval in planning the facility.
5.1.2 Cargo Facility Overview

Figure 5-1. Typical Cargo Facility Layout
5.2 CARGO FACILITY TYPES OVERVIEW

This section outlines general requirements for the various types of cargo facilities.

5.2.1 Cargo Inspection Facility

A cargo inspection facility is a Federal Inspection Services (FIS) area provided by the CFO that includes operational support space for CBP officers’ inspections at the CES, cargo warehouses, air cargo facilities, sea cargo terminals, the FTZs, and rail line depots. The cargo inspection facility shall be located to provide efficient means of accessing remote inspection locations. Refer to this Standard, Chapter 6, Cargo Inspection Facility Design, for space programming and design requirements.

5.2.2 Centralized Examination Station

Federal regulations, 19 C.F.R. §§ 118.0 – 118.23, provide the CFO’s responsibilities and the CES requirements. A CES is typically used for air and sea cargo only. A CES may also be used for truck cargo at a land port of entry (LPOE) (refer to CBP Land Port of Entry Design Standard) when the area does not have capacity or means for processing truck cargo. At a CES, operators collect fees from the importer/freight companies for the handling, receipt, security, and entry of their goods. Refer to this Standard, Chapter 7, Centralized Examination Station Design, for space programming and design requirements.

5.2.3 Cargo Warehouse Facilities

Federal regulations, 19 C.F.R. §§ 19.1 – 19.39, provide the CFO’s responsibilities and warehouse requirements. Large items are detained at the warehouse for CBP inspection. CBP requires access to a standup desk or workstation (with power and data). CBP officers require personal equipment and access to restrooms and eyewash facilities while working at the facility. Refer to this Standard, Chapter 8, Cargo Warehouse Facility Design, for space programming and design requirements.

5.2.4 Air Cargo Facilities

The CFO shall provide space for targeted and seized cargo inspections for CBP. Examination and physical inspection is carried out at cargo inspection points using non-intrusive inspection (NII) technology, canine enforcement units, and agricultural examination spaces. To facilitate the proper control of transported cargo, inspection areas shall be adjacent to cargo holding areas, an air cargo warehouse laydown area, or other CBP access points. Refer to this Standard, Chapter 9, Air Cargo Facility Design, for space programming and design requirements.

5.2.5 Sea Cargo Terminal Facilities

The CFO shall provide space for targeted and seized cargo inspections for CBP. Examination and physical inspection is carried out at sea cargo inspection points, including rivers and lakes, using NII technology, canine enforcement units, and agricultural examination spaces. To facilitate the proper control of transported cargo, inspection areas shall be adjacent to cargo holding areas, a sea cargo warehouse laydown area, or other CBP access points. Refer to this Standard, Chapter 10, Sea Cargo Terminal Design, for sea cargo/dock space programming and design requirements.
5.2.6  Foreign Trade Zone

The FTZs are restricted access sites where CBP performs inspections and may collect duties. When required by CBP, the FTZ operator shall provide CBP with dedicated inspection space, restrooms, and eyewash facilities. Refer to this Standard, Chapter 11, Foreign Trade Zone Design, for FTZ’s space programming and design requirements.

5.2.7  Intermodal Yard Facilities

CBP may maintain a presence at intermodal yards. The CFO shall provide inspection space for targeted and seized cargo for CBP. Examination and physical inspection is carried out at cargo induction points using NII technology, canine enforcement units, and agricultural examination spaces. To facilitate the proper control of transported cargo, inspection areas shall be adjacent to cargo holding areas, a cargo warehouse laydown area, or other CBP access points. Refer to this Standard, Chapter 12, Intermodal Facility Design, for intermodal yard space programming and design requirements.

5.2.8  Land (Vehicular) Cargo

Refer to the LPOE Design Standard, Chapter 7, Commercial Vehicle Inspection, for the programming and design requirements for the inspection of commercial goods entering the United States through an LPOE.
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CHAPTER 6 – CARGO INSPECTION FACILITY DESIGN

6.1 INTRODUCTION

This chapter describes U.S. Customs and Border Protection’s (CBP) design, programming, and construction requirements for cargo inspection facilities' CBP security areas (CSA), operational support areas, and other related areas. The application of this Standard, combined with strict security controls, will provide efficient processing of international cargo.

These design and construction requirements were developed to guide cargo facility operators (CFOs) and architects/engineers (A/E s) in planning cargo inspection facilities that comply with CBP operational/inspection requirements. These standards were developed to promote situational awareness. This chapter describes CBP cargo inspection facilities, including:

- Inspection area spaces.
- Operational support spaces.
- Staff support spaces.
- Building support spaces.

6.1.1 Space Requirements

General space requirements for new and renovated facilities are provided in specific facility chapters, Chapters 6-12, of this Standard. The amount of space and operational requirements for a specific site are defined by the project program of requirements (POR), per CBP operational needs. Refer to the detailed room requirements in Chapter 22, Room Data Sheets. The CFO shall contact CBP early in the project concept phase for guidance and approval when planning the facility.

6.2 CARGO INSPECTION FACILITY REQUIREMENTS OVERVIEW

6.2.1 General Facility

Cargo inspection facility designs shall be reviewed and approved by the Field Operations Facilities Program Management Office Project Manager (FOF PMO PM) and all CBP stakeholders associated with the project prior to permit application or soliciting bid documents. The FOF PMO PM will coordinate the review for CBP stakeholders. A cargo inspection facility shall be designed to promote safe and efficient inspections and operational support tasks by CBP officers. The cargo inspection facility shall have workspace and storage space for CBP officers and equipment deployed to nearby inspection points assigned to the cargo inspection facility. CBP space shall only be located on the ground floor of a building due to seized property restrictions.

6.2.2 Accessibility

The facility shall meet the Architectural Barriers Act Accessibility Standard (ABAAS) for federally occupied facilities to accommodate CBP personnel and/or brokers requiring accessible means of egress and circulation.

6.2.3 Inspection Area

The CFO shall provide CBP with inspection space for examination and potential seizure of cargo. For proper control of transported cargo, this space shall be adjacent to the loading dock or dedicated CBP access points.
CBP officers perform examinations and physical inspections at cargo inspection points using non-intrusive inspections (NII) units, canine enforcement units, and agriculture work areas. Inspection areas shall be located reasonably close to cargo holding areas and CBP access points. At high traffic locations with multiple loading areas and/or warehouses, CBP requires a staging area within or near each area. Space shall also be designated for detention of suspicious cargo for further CBP processing.

Coordinate with the FOF PMO PM for specific layout requirements, which vary by facility.

6.2.4 Operational Support Space

The CFO shall provide CBP with space necessary to support CBP’s operations (“operational support space”). CBP requires operational support space, including storage space, lavatories, safe drinking water, and parking for government-owned vehicles (GOVs) for the CBP staff at the cargo inspection facility. Office space shall meet the requirements provided in this chapter and in Chapter 22, Room Data Sheets. Operational support spaces shall be located adjacent to examination areas and within the CBP-controlled space only.

6.2.5 Security Features

The cargo inspection facility shall comply with the current edition of the CBP Security Policy and Procedures Handbook (SPPH). CBP compliance requirements include, but are not limited to, door hardware, duress alarms, lighting requirements, hardened construction for specific areas, closed-circuit television (CCTV), intrusion detection systems (IDSs), access controls, and signage. Refer to the CBP Signage Design Standard for signage requirements.

6.2.6 Seized Property/Isolation Storage

The CFO shall include space for CBP’s Office of Fines, Penalties, and Forfeitures to securely store detained or seized cargo awaiting CBP disposition or removal. The agriculture inspection space shall also include adequate space for the isolation and removal of quarantined materials. Refrigerated storage may also be required.
6.2.7 Cargo Inspection Facility Layout

![Cargo Inspection Facility Layout Diagram]

**Figure 6-1. Cargo Inspection Facility Layout**
6.3 SPACE REQUIREMENTS MATRIX

Every cargo inspection facility requires evaluation of a space requirements matrix. The matrix is a table of rooms and size requirements used for planning the overall building functions and size. During a project-programming phase, the FOF PMO PM will determine which spaces will be used and the quantities applicable to the specific cargo inspection facility, in coordination with the Office of Field Operations (OFO). Some spaces are determined by the number of officers assigned to the cargo inspection facility as well as the peak shift requirements.

The CFO shall provide a staging area for CBP inspections, as determined by CBP.

Table 6-1. Cargo Inspection Facility Space Requirements Matrix

<table>
<thead>
<tr>
<th>Room Code</th>
<th>Space Name</th>
<th>Unit of Measure</th>
<th>NASF*Per UM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRG-01-01</td>
<td>Secondary Inspection Area</td>
<td>Area</td>
<td>1480</td>
</tr>
<tr>
<td>CRG-01-02</td>
<td>Agriculture Lab</td>
<td>Each</td>
<td>150 (min)</td>
</tr>
<tr>
<td>CRG-01-03</td>
<td>Agriculture Lab Disposal Room</td>
<td>Each</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-01-04</td>
<td>Tool Storage Room</td>
<td>Each</td>
<td>40</td>
</tr>
<tr>
<td>CRG-01-05</td>
<td>Fraud/Forensic Laboratory</td>
<td>Each</td>
<td>120</td>
</tr>
<tr>
<td>CRG-01-06</td>
<td>Seizure Processing Area</td>
<td>Area</td>
<td>150</td>
</tr>
<tr>
<td>CRG-01-07</td>
<td>Temporary Seized Property Storage Vault</td>
<td>Each</td>
<td>80</td>
</tr>
<tr>
<td>CRG-01-08</td>
<td>Examination and Physical Inspection Area</td>
<td>Area</td>
<td>2,240</td>
</tr>
<tr>
<td>CRG-01-12</td>
<td>Enforcement Tool Room</td>
<td>Each</td>
<td>150</td>
</tr>
<tr>
<td>CRG-01-13</td>
<td>Personnel Protective Equipment Storage</td>
<td>Each</td>
<td>150</td>
</tr>
<tr>
<td>CRG-01-14</td>
<td>APHIS/VS/ Bird Holding</td>
<td>Varies</td>
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Circulation

<table>
<thead>
<tr>
<th>Room Code</th>
<th>Space Name</th>
<th>Unit of Measure</th>
<th>NASF*Per UM</th>
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<tbody>
<tr>
<td>CRG-02-04</td>
<td>Assistant Port Director’s Office</td>
<td>Person</td>
<td>175</td>
</tr>
<tr>
<td>CRG-02-05</td>
<td>Chief’s Office</td>
<td>Person</td>
<td>150</td>
</tr>
<tr>
<td>CRG-02-06</td>
<td>Supervisor’s Office</td>
<td>Person</td>
<td>150</td>
</tr>
<tr>
<td>CRG-02-07</td>
<td>Support Staff Workstation</td>
<td>Workstation</td>
<td>64</td>
</tr>
<tr>
<td>CRG-02-08</td>
<td>CBP Officer Work Area</td>
<td>Workstation</td>
<td>64</td>
</tr>
<tr>
<td>CRG-02-07</td>
<td>Canine Officer Workstation</td>
<td>Workstation</td>
<td>64</td>
</tr>
<tr>
<td>CRG-02-09</td>
<td>Supply/Storage Room</td>
<td>Room</td>
<td>100 (min)</td>
</tr>
<tr>
<td>CRG-02-10</td>
<td>Conference Room - Muster / Training</td>
<td>Room</td>
<td>300</td>
</tr>
<tr>
<td>CRG-02-11</td>
<td>Conference Room – Small</td>
<td>Room</td>
<td>200</td>
</tr>
<tr>
<td>CRG-02-12</td>
<td>Document Handling Room</td>
<td>Room</td>
<td>100 (min)</td>
</tr>
<tr>
<td>CRG-02-13</td>
<td>Local Area Network (LAN) Room</td>
<td>Room</td>
<td>180 (min)</td>
</tr>
<tr>
<td>CRG-02-14</td>
<td>Supplemental Local Area Network (SLAN) Room</td>
<td>Room</td>
<td>120 (min)</td>
</tr>
<tr>
<td>CRG-02-15</td>
<td>Intermediate Distribution Frame (IDF)</td>
<td>Room</td>
<td>80 (min)</td>
</tr>
</tbody>
</table>

Total Inspection Support Space 25%
Table of Space Requirements: Cargo Inspection Facility

<table>
<thead>
<tr>
<th>Room Code</th>
<th>Space Name</th>
<th>Unit of Measure</th>
<th>NASF*Per UM</th>
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<tbody>
<tr>
<td>CRG-02-07</td>
<td>Call Center</td>
<td>Workstation</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td><em>Circulation</em></td>
<td>Total Operational</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Support Space</td>
<td></td>
</tr>
<tr>
<td>CRG-03-01</td>
<td>Staff Break Room</td>
<td>Room</td>
<td>240 (min)</td>
</tr>
<tr>
<td>CRG-03-02</td>
<td>Male Locker Room</td>
<td>Lockers/ Fixtures/</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Showers</td>
<td></td>
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<td>Varies</td>
</tr>
<tr>
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<td>Showers</td>
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<td>Laundry Room</td>
<td>Washer/ Dyer</td>
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<td>- Service Yard</td>
<td>Service Containers</td>
<td>Varies</td>
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<td><em>Circulation</em></td>
<td>Total Building</td>
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<tr>
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<td>Support Space</td>
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Notes: NSF = Net Square Feet

* The size of the spaces may deviate from the requirement based on the specific facility POR, other limitations, or FOF PMO PM input.

6.4 FUNCTIONAL AREAS

Adjacencies and process flow within an area are as important as the adjacencies and process flow between areas. The following sections describe the functional areas in the cargo facility and the spaces and rooms therein. Specific requirements for all the rooms listed below may be found in Chapter 22, Room Data Sheets. Numbers associated with rooms described above are the room codes assigned in the room data sheets (RDS).

6.5 INSPECTION AREAS

To facilitate the processing of cargo, the CFO shall provide appropriately sized and designed inspection, processing, and hold areas at the cargo inspection facility for secondary/intensive inspections. The CSA shall be physically secure to prevent unauthorized access. The processing area may include a canine inspection area, X-
ray screening area, fraud/forensic examination area, and an agriculture inspection and quarantine area. Canine inspection is generally conducted at container locations. Seized property shall be processed and temporarily detained, per CBP policy.

6.5.1 Examination and Physical Inspection Area

CBP officers and agriculture specialists examine and physically inspect the cargo in this area. Examinations may require work tables and inspection workstations equipped with terminals for data input. Additional space shall be provided in this area, as necessary, for mass cargo inspection.

This space is adjacent to cargo holding areas. The A/E shall coordinate with CBP for specific layout requirements, which vary by location.

6.5.2 Secondary Inspection Area

This area includes storage capability for enforcement tools and other necessary equipment and technology. Depending on anticipated cargo, this space may include X-ray equipment, computers, scales, agriculture tables, and/or machine tools for disassembling cargo.

6.5.3 Agriculture Laboratory

The agriculture laboratory is the receiving point for the examination, safeguarding, and disposal of regulated and prohibited agriculture items. The agricultural laboratory contains sufficient equipment to inspect, dispose of, or quarantine cargo, i.e., counters, sinks, grinders, inspection tables, and room for storage of quarantine material before it is transported to a disposal room. Additional equipment may be required if an agriculture disposal room is not present. The activities conducted in the laboratory include inspection of animal and plant products and wood packing materials for pests, plant diseases, and contaminants such as soil, seeds, weeds, and prohibited plants materials. Agriculture specialists perform various inspection methods conducive to intercepting pests and contaminants in regulated and prohibited agriculture and non-agriculture products. The laboratory is located adjacent to the agriculture work area.

6.5.4 Agriculture Lab Disposal Room

The agriculture disposal room contains a steam sterilizer, cooker, or trashcans used by the agriculture inspection staff for the destruction/sterilization of agriculture products not cleared for entrance into the United States. In some locations, a large capacity freezer may be used to quarantine material interceptions (QMI) until a disposal service can retrieve it, or if the port is equipped with an incinerator, the QMI may be burned.

6.5.5 Tool Storage Room

The tool storage room is used by CBP officers within the secondary inspection area. The tool storage room does not have to be a separate enclosed space if there is adequate floor area in the secondary inspection area for this purpose. This room must have a lockable equipment cabinet and be located within the secondary inspection area.
6.5.6  **Fraud/Forensic Laboratory**

The fraud/forensic laboratory is used by CBP officers and enforcement staff to review and determine the authenticity of suspected fraudulent entrance documents. The fraud/forensic laboratory is located outside of the violator area.

6.5.7  **Seizure Processing Area**

The seizure processing area is adjacent to the temporary vault, with a minimum of two feet clearance between the temporary vault wall and the seizure processing area perimeter wall. The seizure processing area is located within the access-controlled secure area of the cargo inspection facility, but generally outside of the violator area. The seizure processing area requires an expedited access route to transport contents into a secure corridor that leads to the sallyport or controlled exterior transfer point. This room shall comply with “seized property vaults and storage rooms for permanent and temporary storage,” the relevant sections of the current edition of the CBP SPPH and the United States Drug Enforcement Administration (DEA) regulations contained at 21 C.F.R. §§ 1301.72-1301.76. The most stringent requirements of each shall take precedence. The design shall meet Office of Professional Responsibility (OPR) requirements and be approved by the OFO Fines, Penalties and Forfeitures Division.

6.5.8  **Temporary Seized Property Storage**

The temporary seized property storage is a hardened secure room within restricted space used for the temporary storage (72 hours or less) of seized property. The temporary seized property storage is located adjacent to the seizure processing area. The temporary seized property storage room shall be appropriately sized to contain the type, size and quantity of cargo to be stored. This room shall comply with the current edition of the CBP SPPH and DEA regulations contained at 21 CFR §§ 1301.72-1301.76. The most stringent requirements of each shall take precedence. The design of the temporary seized property storage room shall meet the OFO Fines, Penalties and Forfeitures requirements.

6.5.9  **Enforcement Tool Room**

The enforcement tool room is an access-controlled room where CBP stores tools and equipment, drug testing kits and currency counters used by officers to support inspections. This room requires a sufficient working surface for cargo breakdown. The enforcement tool room should be located immediately adjacent to the seizure processing area.

6.5.10  **Personal Protective Equipment Storage**

A room shall be provided to store personal protective equipment (PPE), such as gloves, masks, and goggles used by officers to protect themselves from contaminate germs and harmful materials. The room shall also contain equipment such as automated external defibrillators (AEDs). This room is ideally located in the secondary area. In addition to provisions for the IDS that provide perimeter and volumetric detection of unauthorized access, special construction details are required for this room. These are outlined in the CBP SPPH for strong rooms.

Regardless of room size, 18-inch deep, heavy-duty, adjustable metal shelving positioned to maximize storage (bolted to wall or floor) is required as specified by CBP.
6.5.11 APHIS/VS/Bird Holding

Birds are not allowed into the United States without U.S. Department of Agriculture Veterinary Services (USDA VS) inspection, ensuring that they are not carrying diseases or parasites. Birds are temporarily held in this space while awaiting transfer to a bird quarantine facility. They must provide space for bird holding cages (to prevent birds from coming into contact with each other), materials needed for proper quarantine procedures, bird feed, and supplies and equipment to maintain adequate conditions for the birds. The holding area must also have the proper required ventilation. The holding area is typically located adjacent to the non-commercial secondary inspection area.

6.6 OPERATIONAL SUPPORT AREAS

Operational support spaces are used by the officers and staff to perform inspection management responsibilities, run associated CBP programs, and maintain job skills and readiness. These spaces are generally not accessible by the public.

CBP requires operational support areas to ensure operational activities are conducted in an effective manner, which facilitates well-coordinated public interaction. The CFO shall provide offices, conference rooms, and workspaces at the facility, per CBP requirements to support these functions. CBP operational support space is always separated from, but in close proximity to, the cargo inspection areas.

Depending on the cargo inspection facility size and function, a port director (PD), assistant port director, and chief’s office, and an operational support reception area, if needed, will form the core of the operational support area.

Other functions in the operational support area shall include an open office work area for other officers, staff support workspace, files and storage space, and document handling spaces. Conference/training rooms shall also be in this area.

6.6.1 Public/Broker Waiting Area

This area provides the public, CFO staff, brokers, and members of the trade with access to CBP staff.

6.6.2 Public/Broker Reception Workstation

This workstation is used by CBP staff to meet with the CFO staff, brokerage, and members of trade, and if cleared by CBP, to provide access to the CSA. The reception workstation is located adjacent to the waiting area and should have physical separation from the waiting area.

6.6.3 Port Director’s Office

The PD is responsible for various CBP programs and the administration of the cargo inspection facility. The office is used for small meetings concerning port operations with staff, cargo representatives, or other U.S.-government representatives. Access shall be controlled through the reception/public area. A dedicated conference room shall be nearby, accessible without travelling through the reception/public area.
6.6.4 Assistant Port Director’s Office

The assistant port director is responsible for the support of various CBP programs and the administration of the cargo inspection facility. The office is used for small meetings concerning the cargo inspection facility operations and staff, cargo representatives, or other U.S.-government representatives. The assistant port director is generally located near the PD’s Office.

6.6.5 Chief CBP Officer’s Office

The Chief CBP Officer provides supervisory functions for the first line supervisor and associated officers. The Chief CBP Officer’s office is located within the CBP operational support area and must have a view of the inspection areas. If the commercial dock is in close proximity to the operational support spaces, the Chief CBP Officer should have a direct line of sight to the area.

6.6.6 Supervisor’s Office

The Supervisory CBP Officer manages the day-to-day activities and performance of CBP Officers and is available to the public, as required. This position directs and manages the planning, development, and implementation of mission-critical administrative elements and information requirements for the cargo inspection facility.

6.6.7 Support Staff Workstation

The support staff workstation is used to assemble packages and complete paperwork, as well as provide space for the performance of CBP operational support duties. The support staff workstation is located in the CBP officer work area.

6.6.8 CBP Officer Workstation

One officer workstation is required for each CBP Officer during peak shift.

6.6.9 CBP Officer Work Area

The CBP Officer work area is a shared workspace where officers perform their required duties. The officers may be seated at either workstations or freestanding desks.

6.6.10 Canine Officer Workstation

The canine officer workstation is used by the canine enforcement officer (CEO) on any given shift to have access to a computer and shared printing and faxing for documentation preparation. The canine officer workstation is located in the CBP officer work area.

6.6.11 Supply/Storage Room

This space is used to store supplies, office equipment, active files, interim records, and other miscellaneous items required for CBP operations.
6.6.12 Conference Room – Muster/Training

The conference room – muster/training room is used to conduct internal meetings, officer musters, and meetings with other federal agency members, as necessary. The space shall have audio and video capabilities. It is located adjacent to the other work areas and support spaces. This space can be combined with a computer-training lab at the discretion of the PD.

6.6.13 Conference Room – Small

Meeting rooms shall be provided with 2-6-person capacity to provide private conversation space for CBP personnel.

6.6.14 Document Handling Room

This room houses typical office equipment to photocopy, scan, print, assemble, and mail documents. Document handling is also used to store supplies and miscellaneous equipment. In smaller cargo inspection facilities, this room may be collocated within an expanded officer work area.

6.6.15 Local Area Network Room

The local area network (LAN) room is a secure space that accommodates all CBP LAN equipment and all facility system equipment connected to the CBP network. The LAN room combines the voice, data, and other systems into one area within the facility. The LAN room shall contain only DHS information technology (IT) equipment. Colocation of non-DHS/CBP IT equipment is not permitted. Within the room, racks will be installed and IT equipment enclosed in lockable cabinets. The CCTV camera(s) will be located within the LAN to ensure no blind spots. Dedicated heating, ventilation, and air conditioning (HVAC) controls are required within the LAN room to regulate the temperature and humidity levels in this room.

This room shall be constructed in compliance with the current CBP SPPH standards relating to the construction of a strong room.

6.6.16 Supplemental Local Area Network Room

A supplemental local area network (SLAN) may contain network and system equipment, such as head-end for the IDS, CCTV, NII system as well as any other system that is not connected to CBP secure LAN. Within the room, racks will be installed, and equipment shall be enclosed in lockable cabinets. The CCTV camera(s) will be located within the SLAN to eliminate blind spots. Dedicated HVAC controls are required within the SLAN room to regulate the temperature and humidity levels in this room. The SLAN shall be located adjacent to LAN room.

This room will be constructed in compliance with the current CBP SPPH standards relating to the construction of a strong room.

6.6.17 Intermediate Distribution Frame Room

The intermediate distribution frame (IDF) room, separate from the LAN, is required at all ports where cable runs from the LAN exceed 300 feet. Data processing and retrieval is less reliable where long distances exist between the LAN and workstation terminals. The IDF’s provide an intermediate access point to strengthen the data and communications service to remote portions of a facility. All necessary cabling and conduit must be
provided to support the equipment furnished and installed by the government. The IDF will comply with the current CBP SPPH.

6.6.18 Call Center
Where required at cargo inspection facilities, provide a workstation in the operational support area for the CFO to coordinate with an officer in reference to incoming vessels.

6.7 STAFF SUPPORT AREAS
The following basic facilities shall be provided to support CBP personnel in their duties.

6.7.1 Staff Break Room
The break room serves as the location where CBP employees prepare and have their meals. The break room shall include space for vending machines and built-in wall and base cabinets. This room shall be provided with a kitchen unit, including a refrigerator, microwave device, sink, and miscellaneous storage in cabinets. Should the kitchen unit not have adequate work surface to support individual tasks at meal preparation, the provider shall include a separate counter, complete with storage cabinets above and below the kitchen unit. As the room will also include miscellaneous vending machines, an appropriate number of electrical outlets shall be provided in the design of the room configuration.

6.7.2 Men's Locker Room and Women's Locker Room
The locker room space houses the lockers for the officers. The locker rooms shall have direct access to the staff showers and have an entry from a corridor or other staff support space. The locker rooms shall be located near the main staff entry point to the building.

6.7.3 Staff Shower (Men and Women)
Shower facilities are provided for the staff to allow for proper hygiene after physical training and other activities. Staff showers shall be located adjacent to or combined with staff toilets.

6.7.4 Staff Restrooms (Men and Women)
Staff toilets shall be located conveniently for all staff and sized to meet plumbing codes and port needs. Staff toilet rooms shall comply with ABAAS standards. If only one set of staff toilets is required, they shall be located adjacent to or combined with staff showers.

6.7.5 Lactation Support Room
The lactation support room is provided for CBP employees who are nursing mothers to express breast milk for their nursing child for up to one year after the child’s birth. This activity is allowed during a reasonable employee break time; thus, lactation support shall be close to the CBP employee break room and staff toilets. The space and fixed equipment within shall be ABAAS-compliant. This space is provided in compliance with CBP Directive No. 51711-004, Lactation Support Program (January 25, 2011).
6.7.6 Public Restroom
Public restrooms shall be located in the public waiting area with entrance doors clearly visible from the officer work area. Restrooms shall be accessible in compliance with ABAAS.

6.7.7 Weapons Secure Storage
The weapons secure storage room is used for the storage of CBP weapons and paraphernalia for the use and carrying of weapons.

6.7.8 Day Kennel
The day kennel is a suite of rooms incorporating functions of the canine team area, kennel runs, and kennel room. The day kennel is used for temporarily housing canines, preparing canine food, storing dry canine food, providing grooming, and animal health care. Day kennels should be adjacent to the canine office, away from public access and view, directly accessible to the CBP processing areas where the dogs work most often, and near government vehicle parking. Day kennels shall not be used to house canines overnight.

6.7.9 Canine Storage
Canine storage is for the storage of miscellaneous items necessary to operate the kennel and provide animal care. It may serve as the vestibule to other storage areas, which are located outside of animal occupied areas.

6.7.10 Canine Team Area
This space is for animal health care and grooming. Special equipment should include a storage cabinet for health and grooming items and a waist-high, freestanding table or cabinet for grooming or tending the animals. Finishes should use materials that are durable and easily cleaned, such as non-skid, sealed concrete or vinyl floors and epoxy-painted concrete or masonry walls. All floors should be sloped to the floor drain for wash down and proper drainage. Cabinets in food preparation and animal processing areas should have stainless-steel countertops with stainless-steel wall panels from the backsplash to the cabinets above.

6.7.11 Laundry Room
The laundry room should be an area or alcove with separate stackable washer and dryer units for washing and drying of hard narcotics training aids, soft narcotics training aids, currency training aids, and general fabrics. A separate washer/dryer will be required for each training discipline and there shall be no cross contamination between the disciplines. Training aid specific washers and dryers are only required at facilities that house/employ that particular discipline of canine.

6.8 BUILDING SUPPORT
Cargo inspection facility buildings require typical building systems to operate efficiently and support CBP operations.

The CFO shall provide the maintenance and janitorial services necessary to assure that the building systems and facility, including all government offices and support spaces, are maintained to provide a clean, safe, and fully operable environment for CBP personnel.
Scheduled maintenance and janitorial work shall be coordinated with CBP to preclude interfering with CBP operations or compromising security. All maintenance and cleaning personnel with access to the CBP area shall be cleared by CBP. CBP shall be present during all maintenance and cleaning operations required during non-operational hours.

6.8.1 **Freight Elevator**

A freight elevator is required for facilities where CBP inspections occur on two or more levels. Certain CBP spaces, including seized property storage, processing, and secondary inspection areas, shall be located on the ground level. The cargo inspection facility may use an existing freight elevator if the elevator meets minimum size requirements, is available for CBP use, and is in an easily accessible location from the CBP area. The size and load capacity of the elevator cab shall accommodate a forklift and the transport of pallets.

6.8.2 **Emergency Generator**

The emergency generator provides back-up power when electric power from the local utility is interrupted. The cargo facilities shall provide emergency back-up power for 150% of the design load. The cargo facilities shall be able to be operational to allow CBP officers to properly shutdown equipment and close the facility. The emergency generator shall be located outside in an enclosed shelter, if possible, or within the building support space area of the building (adjacent to the fuel storage space, and not adjacent to vehicle pathways or primary inspection points). See this Standard, Chapter 19, for a complete overview of emergency generator requirements.

6.8.3 **Mechanical Room**

The mechanical room provides space for the HVAC and domestic hot water equipment, the water treatment system, and the heater serving the building. It is located adjacent to other building support spaces, preferably with an additional direct access to a service yard. If no separate pump room is included, fire protection piping shall be in the mechanical room.

6.8.4 **Janitor Closet**

The janitor closet is used for the storage of essential cleaning equipment and cleaning supplies used by the janitorial staff in maintaining the building. It is located adjacent to the support spaces within the building.

The cargo inspection facility shall provide the janitorial services necessary to ensure that the facility, including all government offices and support spaces, is maintained in a fully operable condition that provides a clean and safe environment for CBP personnel.

6.8.5 **Service Yard**

CBP requires that cargo inspection facilities in some locations provide a service yard for parking two containers.
CENTRALIZED EXAMINATION STATION

Cargo Facilities Design Standard 2019 (Draft)

U.S. Customs and Border Protection

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CHAPTER 7 - CENTRALIZED EXAMINATION STATION DESIGN

7.1 INTRODUCTION

This chapter describes U.S. Customs and Border Protection’s (CBP) design and construction requirements for centralized examination stations’ (CES) inspection areas and operational support areas. The application of this Standard, combined with strict security controls, will provide efficient facilitation of international cargo.

These design and construction requirements were developed to guide cargo facility operators (CFOs) and architects/engineers (A/E s) in planning cargo inspection facilities that comply with CBP operational/inspection requirements. These standards were developed to improve inspection compliance and promote situational awareness. This chapter describes:

- Inspection area spaces.
- Operational support spaces.
- Staff support spaces.
- Building support spaces.

7.1.1 Space Requirements

General requirements for new and renovated facilities are provided in the specific facility chapters, Chapters 6-12, of this Standard. The amount of space and operational requirements for a specific site, per CBP operational needs, are defined by the project program of requirements (POR). Refer to the detailed room requirements in Chapter 22, Room Data Sheets. The CFO is required to contact CBP in the early project concept phase for guidance and approval in planning the facility.

7.2 CENTRALIZED EXAMINATION STATIONS FACILITY REQUIREMENTS OVERVIEW

7.2.1 General Facility

Cargo inspection facility designs shall be reviewed and approved by the Field Operations Facilities Program Management Office Project Manager (FOF PMO PM) and all CBP stakeholders associated with the project prior to the CFO applying for a permit or requesting construction bid documents. A cargo inspection facility shall be designed to promote safe and efficient inspections and operational support tasks by CBP officers. The facility and site shall:

- Maintain physical security standards.
- Enable rapid devanning of cargo at a CES.
- Enable secure storage and movement of cargo at a CES.
- Provide easily accessible cargo for CBP examination.
- Provide easily accessible containerized cargo reload.

7.2.2 Accessibility

The site shall facilitate easy truck access to the facility to unload and discharge 40'-0" · 45'-0" containers. The facility location should not create a significant delay in the cargo delivery time to or from the facility. The site shall facilitate space for maneuvering containers into position at bay doors. The site shall allow a truck to back a container straight into each bay.
7.2.3 Cargo Unloading Area

The number of bays and size of the unloading area shall accommodate the anticipated examination load. Growth capability shall be a factor in rating the suitability of a site/facility; this shall be included with the proposal.

7.2.4 Inspection Area

The CFO shall provide CBP with inspection space for examination and potential seizure of cargo. For proper control of transported cargo, this space shall be adjacent to the loading dock or dedicated CBP access points. CBP officers perform examinations and physical inspections at cargo induction points using non-intrusive inspections (NII) units, canine enforcement units, and agriculture work areas. Inspection areas shall be located reasonably close to cargo holding areas and CBP access points. At high traffic locations with multiple loading areas and/or warehouses, CBP requires a staging area within or near each area. Space shall also be designated for detention of suspicious cargo for further CBP processing. CBP prefers that sufficient space, adjacent to the bay doors, be provided to accommodate quick and simultaneous cargo examination from a number of containers. Coordinate with FOF PMO PM for specific layout requirements, which vary by facility.

7.2.5 Operational Support Space

The CFO shall provide CBP with space necessary to support CBP’s operations (“operational support space”). CBP requires operational support space, including storage space, lavatories, safe drinking water, and parking for government-owned vehicles (GOVs) for the CBP staff at the cargo inspection facility. Office space and workspace shall meet the requirements provided in this chapter and in Chapter 22, Room Data Sheets. Operational support spaces shall be located adjacent to examination areas and within the CBP-controlled space only.

7.2.6 Security Features

The CES shall comply with the current edition of the CBP Security Policy and Procedures Handbook (SPPH). CBP compliance requirements include, but are not limited to, hardware on doors, duress alarms, lighting requirements, hardened construction for public entries and strong rooms, closed circuit television (CCTV), intrusion detection systems (IDSs), access controls, and signage. Refer to the CBP Signage Design Standard for signage requirements.

7.2.7 Container Storage

The CFO shall provide a secure container yard to store containers. CBP recommends providing two container parking spaces of storage, per bay door.

7.2.8 Short Term/Isolation Storage

The CFO shall provide space for securely storing detained or seized cargo awaiting CBP disposition. Refrigerated storage may also be required.
7.3 SPACE REQUIREMENTS MATRIX

Every CES requires evaluation of a space requirements matrix. The matrix is a table of rooms and size requirements used for planning the overall building functions and size. During a project-programming phase, the FOF PMO PM will determine which spaces will be used and the quantities applicable to the specific cargo inspection facility, in coordination with the Office of Field Operations (OFO). Some spaces are determined by the number of officers assigned to the cargo inspection facility as well as the peak shift requirements.

The CFO shall provide a staging area for CBP inspections, as determined by CBP.

7-1. CES Space Matrix Requirements

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<td>Secondary Inspection Area</td>
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<td>Examination and Physical Inspection Area</td>
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<td>Cargo Release Area</td>
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<td>Local Area Network (LAN) Room</td>
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<td>Supplemental Local Area Network (SLAN) Room</td>
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<tr>
<td></td>
<td><strong>Total Operational Support Space</strong></td>
<td></td>
<td><strong>25%</strong></td>
</tr>
<tr>
<td>CRG-03-04</td>
<td>CBP Staff Restroom</td>
<td>Fixtures</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-03-01</td>
<td>Staff Break Room</td>
<td>Room</td>
<td>240 (min)</td>
</tr>
<tr>
<td></td>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Staff Support Space</strong></td>
<td></td>
<td><strong>25%</strong></td>
</tr>
<tr>
<td>CRG-04-01</td>
<td>Emergency Generator</td>
<td>Each</td>
<td>200 SF</td>
</tr>
<tr>
<td>CRG-04-02</td>
<td>Mechanical Room</td>
<td>Each</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td>Service Yard</td>
<td>Service Containers</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Building Support Space</strong></td>
<td></td>
<td><strong>25%</strong></td>
</tr>
</tbody>
</table>

Notes: NSF = Net Square Feet

* The size of the spaces can deviate from the requirement based on the POR for the specific facility and input from the centralized station operator.
7.4 FUNCTIONAL AREAS

Adjacencies and process flow within an area are as important as the adjacencies and process flow between areas. The following are the functional areas in the cargo inspection area and the spaces and rooms therein. Specific requirements for all the rooms listed below may be found in Chapter 22, Room Data Sheets. Numbers associated with rooms described above are the room codes assigned in the sheets. Refer to Chapter 6, Cargo Inspection Facility, for descriptions of inspection areas, operational support areas, staff support areas, and building support spaces.

7.5 INSPECTION AREAS

To facilitate the processing of cargo, the CFO will provide appropriately sized and designed inspection, processing, and cargo holding areas. The CBP inspection and processing area shall be physically secure to prevent unauthorized access. The processing area includes spaces for canine inspections, X-ray screening, and agriculture examination. During canine inspections, dogs screen the containers. The X-ray screening is conducted by NII units. Processing areas generally require unreleased cargo detention areas for safe, secure, temporary cargo detainment.

7.5.1 Unreleased Cargo Holding Area

This area stores cargo that shall remain under CBP control, i.e., shipments awaiting inspection and clearances.

7.5.2 Cargo Release Area

Inspected cargo, once approved for release, is transferred to the cargo release area for reloading of cargo and or goods back onto commercial vehicles.

7.5.3 Cargo Detention Storage

This area stores detained cargo or cargo that is pending further processing. Within the large enclosed cargo storage area, secured storage closets house materials awaiting a determination for their disposition.
CARGO
WAREHOUSE
Cargo Facilities Design Standard
2019 (Draft)

U.S. Customs and Border Protection

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CHAPTER 8 - CARGO WAREHOUSE FACILITY DESIGN

8.1 INTRODUCTION

This chapter describes U.S. Customs and Border Protection (CBP)'s design and construction requirements for cargo warehouse facilities' inspection areas and operational support areas. Cargo warehouses include, but are not limited to, bonded warehouses and freight warehouses. The application of this Standard, combined with strict security controls, will provide efficient facilitation of international cargo.

These design and construction requirements were developed to guide cargo facility operators (CFOs) and architects/engineers (A/Es) in planning cargo warehouse facilities that comply with CBP operational/inspection requirements. These standards were developed to improve inspection compliance and promote situational awareness. This Chapter describes:

- Inspection area spaces.
- Operational support spaces.
- Staff support spaces.
- Building support spaces.

8.1.1 Space Requirements

General space requirements for new and renovated facilities are provided in the specific facility chapters, Chapters 6-12, of this Standard. The amount of space and operational requirements for a specific site, per CBP operational needs, are defined by the project program of requirements (POR). Refer to the detailed room requirements in Chapter 22, Room Data Sheets. The CFO is required to contact CBP in the early project concept phase for guidance and CBP approval in planning the facility.

8.2 CARGO WAREHOUSE FACILITY REQUIREMENTS OVERVIEW

8.2.1 General Facility

Cargo warehouse facility designs shall be reviewed and approved by the Field Operations Facilities Program Management Office Project Manager (FOF PMO PM) and all CBP stakeholders associated with the project prior to the CFO applying for a permit or requesting construction bid documents. A cargo warehouse facility shall be designed to promote safe and efficient inspections and operational support tasks by CBP officers.

The cargo warehouse facility shall have workspace and storage space for CBP officers, equipment deployed to nearby inspection points, technicians, and port officials assigned to the local cargo warehouse facility. CBP space shall only be located on the ground floor of a building due to seized property restrictions.

8.2.2 Accessibility

The facility shall meet the Architectural Barriers Act Accessibility Standard (ABAS) for federally occupied facilities to accommodate CBP personnel and/or brokers requiring accessible means of egress and circulation.
8.2.3 Inspection Area

The CFO shall provide CBP with inspection space for examination and potential seizure of cargo. For proper control of transported cargo, this space shall be adjacent to the loading dock or dedicated CBP access points.

CBP Officers perform examinations and physical inspections at cargo inspection points using non-intrusive inspections (NII) units, canine enforcement units, and agriculture work areas. Inspection areas shall be located close to cargo holding areas and CBP access points. At high traffic locations with multiple loading areas and/or warehouses, CBP requires a staging area within or near each area. Space shall also be designated for detention of suspicious cargo for further CBP processing.

Coordinate with the FOF PMO PM for specific layout requirements, which vary by facility.

8.2.4 Operational Support Space

The CFO shall provide CBP with space necessary to support CBP’s operations (“operational support space”). CBP requires operational support space, including storage space, lavatories, safe drinking water, and parking for government-owned vehicles (GOVs) for CBP staff at the cargo warehouse facility. Office space shall meet the requirements provided in this chapter and in Chapter 22, Room Data Sheets. Operational support spaces shall be located adjacent to examination areas and within the CBP-controlled space only.

8.2.5 Security Features

The cargo warehouse facility shall comply with the current edition of the CBP Security Policy and Procedures Handbook (SPPH). CBP compliance requirements include, but are not limited to, hardware on doors, duress alarms, lighting requirements, hardened construction for public entries and strong rooms, closed-circuit television (CCTV) surveillances, intrusion detection systems (IDSs), access controls, and signage. Refer to the CBP Signage Design Standard for signage requirements.

8.2.6 Container Storage

The CFO shall provide a secure container yard in accordance with the current edition of the CBP SPPH. The purpose of this yard is to hold/store containers that are awaiting further processing at warehouse facilities. CBP recommends providing two container parking spaces of storage per bay door.

8.2.7 Seized Property/Isolation Storage

The CFO shall include space for CBP’s Office of Fines, Penalties, and Forfeitures to securely store detained or seized cargo awaiting CBP disposition or removal. The agriculture inspection space shall also include adequate space for the isolation and removal of quarantined materials. Refrigerated storage may also be required.
8.2.8 Classes of Warehouses

Figure 8-1. Classes of Warehouses

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8.3 SPACE REQUIREMENTS MATRIX

Every cargo warehouse will require evaluation of the space requirements matrix. The matrix is a table of rooms and size requirements used for planning the overall building functions and size. During a project-programming phase, the FOF PMO PM will determine which spaces will be used and the quantities applicable to the specific cargo warehouse facility, in coordination with the Office of Field Operations (OFO). Some spaces are determined by the number of officers assigned to the cargo warehouse as well as the peak shift requirements.

The CFO shall provide a staging area for CBP inspections, as determined by CBP.

Table 8-1. Cargo Warehouse Facility Space Requirements Matrix

<table>
<thead>
<tr>
<th>Room Code</th>
<th>Space Name</th>
<th>Unit of Measure</th>
<th>NASF* Per UM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.0 Inspection Area</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRG-01-01</td>
<td>Secondary Inspection Area</td>
<td>Area</td>
<td>300</td>
</tr>
<tr>
<td>CRG-01-08</td>
<td>Examination and Physical Inspection Area</td>
<td>Area</td>
<td>2,240</td>
</tr>
<tr>
<td>CRG-01-02</td>
<td>Agriculture Lab</td>
<td>Each</td>
<td>120 (min)</td>
</tr>
<tr>
<td>CRG-01-03</td>
<td>Agriculture Lab Disposal Room</td>
<td>Each</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-01-04</td>
<td>Tool Storage Room</td>
<td>Each</td>
<td>40</td>
</tr>
<tr>
<td>CRG-01-11</td>
<td>Cargo Detention Area</td>
<td>Area</td>
<td>1,000</td>
</tr>
<tr>
<td>CRG-01-13</td>
<td>Personnel Protective Equipment Storage</td>
<td>Each</td>
<td>150</td>
</tr>
</tbody>
</table>

Total Inspection Support Space: 25%

| **2.0 Operational Support** |                                           |                 |              |
| CRG-02-08   | CBP Officer Work Area                     | Workstation     | 80           |
| CRG-02-13   | Local Area Network (LAN) Room             | Room            | 180 (min)    |
| CRG-02-14   | Supplemental Local Area Network (SLAN) Room | Room         | 120 (min)    |
| CRG-02-15   | Intermediate Distribution Frame (IDF)     | Room            | 80 (min)     |

Total Operational Support Space: 25%

| **3.0 Staff Support** |                                           |                 |              |
| CRG-03-04   | CBP Staff Restroom                        | Fixtures        | 60 (min)     |
| CRG-03-01   | Staff Break Room                          | Room            | 240 (min)    |
| CRG-03-05   | Lactation Support Room                    | Room            | 60           |

Total Staff Support Space: 25%

| **4.0 Building Support** |                                           |                 |              |
| CRG-04-01   | Emergency Generator                       | Each            | 200 SF       |
| CRG-04-02   | Mechanical Room                           | Each            | Varies       |
| CRG-04-04   | Utility Yard                              | Area            | Varies       |

Total Building Support Space: 25%

Notes: NSF = Net Square Feet  
* The size of the spaces may deviate from the requirement based on the specific facility POR, other limitations, or FOF PMO PM input.
### 8.4 FUNCTIONAL AREAS

Adjacencies and process flow within an area are as important as the adjacencies and process flow between areas. Specific requirements for all the rooms may be found in Chapter 22, Room Data Sheets. Numbers associated with rooms described above are the room codes assigned in the room data sheets. Refer to Chapter 6, Cargo Inspection Facility, and Chapter 7, Centralized Examination Station, for descriptions of inspection areas, operational support areas, staff support areas, and building support spaces.
CHAPTER 9 - AIR CARGO FACILITY DESIGN

9.1 INTRODUCTION

This chapter describes U.S. Customs and Border Protection’s (CBP) design and construction requirements for air cargo facilities’ inspection areas and operational support areas. The application of this Standard, combined with strict security controls, will provide efficient facilitation of international cargo.

These design and construction requirements were developed to guide cargo facility operators (CFOs) and architects/engineers (A/Es) in planning cargo inspection facilities that comply with CBP operational requirements. These standards were developed to improve inspection compliance and promote situational awareness. This chapter describes the CBP cargo inspection facilities, including:

- Inspection area spaces.
- Operational support spaces.
- Staff support spaces.
- Building support spaces.

9.1.1 Space Requirements

General space requirements for new and renovated facilities are provided in the specific facility chapters, Chapters 6-12, of this Standard. The amount of space and operational requirements for a specific site, per CBP operational needs, are defined by the project program of requirements (POR). Refer to the detailed room requirements in Chapter 22, Room Data Sheets. The CFO is required to contact CBP early in the project concept phase for requirements, guidance, and approval in planning the facility.

9.2 AIR CARGO INSPECTION SPACE REQUIREMENTS OVERVIEW

9.2.1 General Facility

Cargo inspection facility designs shall be reviewed and approved by the Field Operations Facilities Program Management Office Project Manager (FOF PMO PM) and all CBP stakeholders associated with the project prior to the CFO applying for a permit or requesting construction bid documents. A cargo inspection facility shall be designed to promote safe and efficient inspection and operational support tasks by CBP officers.

The air cargo inspection facility shall have workspace and storage space for CBP officers, equipment deployed to nearby inspection points, technicians, and port officials assigned to the local cargo inspection facility. CBP space shall only be located on the ground floor of a building due to seized property restrictions.

CBP requirements should not interfere with air cargo operation.

9.2.2 Accessibility

The facility shall meet the Architectural Barriers Act Accessibility Standard (ABAAS) for federally occupied facilities to accommodate CBP personnel and/or brokers requiring accessible means of egress and circulation.
9.2.3 Inspection Area

The CFO shall provide CBP with inspection space for examination and potential seizure of cargo. For proper control of transported cargo, this space shall be adjacent to the loading dock or dedicated CBP access points. CBP officers perform examinations and physical inspections at cargo inspection points using non-intrusive inspections (NII) units, canine enforcement units, and agriculture work areas. Inspection areas shall be located reasonably close to cargo holding areas and CBP access points. At high traffic locations with multiple loading areas and/or warehouses, CBP requires a staging area within or near each area. Space shall also be designated for detention of suspicious cargo for further CBP processing.

Coordinate with the FOF PMO PM for specific layout requirements, which vary by facility.

9.2.4 Operational Support Space

The CFO shall provide CBP with space necessary to support CBP's operations (“operational support space”). CBP requires operational support space, including storage space, lavatories, safe drinking water, and parking for government-owned vehicles (GOVs) for the CBP staff at the cargo inspection facility. Office space shall meet the requirements provided in this chapter and in Chapter 22, Room Data Sheets. Operational support spaces shall be located adjacent to examination areas and within the CBP-controlled space only.

9.2.5 Security Features

The air cargo inspection facility shall comply with the current edition of the CBP Security Policies and Procedures Handbook (SPPH). CBP compliance requirements include, but are not limited to, hardware on doors, duress alarms, lighting requirements, hardened construction for public entries and strong rooms, closed-circuit television (CCTV) surveillances, intrusion detection systems (IDSs), access controls, and statutory/regulatory signs. Refer to the CBP Signage Design Standard for signage requirements.

9.2.6 Seized Property/Isolation Storage

The air cargo inspection facility shall include space for CBP's Office of Fines, Penalties, and Forfeitures to securely store detained or seized cargo awaiting CBP disposition or removal. The agriculture inspection space shall also include adequate space for the isolation and removal of quarantined materials.

9.3 SPACE REQUIREMENTS MATRIX

Every air cargo inspection facility will require evaluation of a space requirements matrix. The matrix is a table of rooms and size requirements used for planning the overall building functions and size. During a project-programming phase, the FOF PMO PM will determine which spaces will be used and the quantities applicable to the specific cargo inspection facility in coordination with the Office of Field Operations (OFO). Some spaces are determined by the number of officers assigned to the cargo inspection facility as well as the shifts planned or in operation.

When there are dozens of warehouses/industry trade locations (e.g., Miami) where planes block and unload/load cargo within each warehouse or area, the CFO shall provide a staging area for CBP inspections.
Table 9-1. Air Cargo Facility Space Requirements Matrix

<table>
<thead>
<tr>
<th>Room Code</th>
<th>Space Name</th>
<th>Unit of Measure</th>
<th>NASF*Per UM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRG-01-08</td>
<td>Examination and Physical Inspection Area</td>
<td>Area</td>
<td>2,240</td>
</tr>
<tr>
<td>CRG-01-02</td>
<td>Agriculture Lab</td>
<td>Each</td>
<td>120 (min)</td>
</tr>
<tr>
<td>CRG-01-03</td>
<td>Agriculture Lab Disposal Room</td>
<td>Each</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-01-12</td>
<td>Enforcement Tool Room</td>
<td>Each</td>
<td>150</td>
</tr>
<tr>
<td>CRG-01-07</td>
<td>Temporary Seized Property Storage Vault</td>
<td>Each</td>
<td>80</td>
</tr>
<tr>
<td>CRG-01-11</td>
<td>Cargo Detention Area</td>
<td>Area</td>
<td>1,000</td>
</tr>
<tr>
<td>CRG-01-13</td>
<td>Personnel Protective Equipment Storage</td>
<td>Each</td>
<td>150</td>
</tr>
</tbody>
</table>

Circulation

Total Inspection Support Space 25%

2.0 Operational Support

<table>
<thead>
<tr>
<th>Room Code</th>
<th>Space Name</th>
<th>Unit of Measure</th>
<th>NASF*Per UM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRG-02-08</td>
<td>CBP Officer Work Area</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-07</td>
<td>CBP Officer Workstation</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-01</td>
<td>Public/Broker Waiting Area</td>
<td>Area</td>
<td>125</td>
</tr>
<tr>
<td>CRG-02-02</td>
<td>Public/Broker Reception Workstation</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-06</td>
<td>Supervisor’s Office</td>
<td>Person</td>
<td>150</td>
</tr>
<tr>
<td>CRG-02-13</td>
<td>Local Area Network (LAN) Room</td>
<td>Room</td>
<td>180 (min)</td>
</tr>
<tr>
<td>CRG-02-14</td>
<td>Supplemental Local Area Network (SLAN) Room</td>
<td>Room</td>
<td>120 (min)</td>
</tr>
<tr>
<td>CRG-02-15</td>
<td>Intermediate Distribution Frame (IDF)</td>
<td>Room</td>
<td>80 (min)</td>
</tr>
<tr>
<td>CRG-02-09</td>
<td>Supply/Storage Room</td>
<td>Room</td>
<td>100 (min)</td>
</tr>
</tbody>
</table>

Circulation

Total Operational Support Space 25%

3.0 Staff Support

<table>
<thead>
<tr>
<th>Room Code</th>
<th>Space Name</th>
<th>Unit of Measure</th>
<th>NASF*Per UM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRG-03-04</td>
<td>CBP Staff Restroom</td>
<td>Fixtures</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-03-02</td>
<td>Male Locker Room</td>
<td>Lockers/ Fixtures/Shower</td>
<td>Varies</td>
</tr>
<tr>
<td>CRG-03-03</td>
<td>Female Locker Room</td>
<td>Lockers/ Fixtures/Shower</td>
<td>Varies</td>
</tr>
<tr>
<td>CRG-03-05</td>
<td>Lactation Support Room</td>
<td>Room</td>
<td>60</td>
</tr>
<tr>
<td>CRG-03-01</td>
<td>Staff Break Room</td>
<td>Room</td>
<td>240 (min)</td>
</tr>
<tr>
<td>CRG-03-08</td>
<td>Day Kennel</td>
<td>Run</td>
<td>300</td>
</tr>
</tbody>
</table>

Circulation

Total Staff Support Space 25%

Notes: NSF = Net Square Feet

* The size of the spaces may deviate from the requirement based on the specific facility POR, other limitations, or the FOF PMO PM input.
9.4 FUNCTIONAL AREAS

Adjacencies and process flow within an area are as important as the adjacencies and process flow between areas. The following are the functional areas in the cargo inspection area and the spaces and rooms therein. Specific requirements for all the rooms listed below may be found in Chapter 22, Room Data Sheets. Numbers associated with rooms described above are the room codes assigned in the room data sheets. Refer to Chapter 6, Cargo Inspection Facility, and Chapter 7, Centralized Examination Station, for descriptions of inspection areas, operational support areas, staff support areas, and building support spaces.
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CHAPTER 10 - SEA CARGO TERMINAL DESIGN

10.1 INTRODUCTION

This chapter provides the U.S. Customs and Border Protection (CBP) dock and laydown inspection, operational support, and other related areas design, programming, and construction requirements applicable to CBP inspection space at sea cargo docks in the United States. The application of this Standard, combined with strict security controls, will provide efficient facilitation of international cargo.

These design and construction requirements were developed to assist cargo facility operators (CFOs) and Architects/Engineers (A/E) in planning cargo inspection facilities, to comply with CBP operational/inspection requirements. These standards were developed to improve inspection compliance and promote situational awareness. This chapter describes:

- Inspection area spaces.
- Operational support spaces.
- Staff support spaces.
- Building support spaces.

10.1.1 Space Requirements

General requirements for new and renovated facilities are provided in the specific facility chapters, Chapters 6-12, of this Standard. The amount of space and operational requirements for a specific site, per CBP operational needs, are defined by the project program of requirements (POR). Refer to the detailed room requirements in Chapter 22, Room Data Sheets. The CFO is required to contact CBP in the early project concept phase for guidance and approval in planning the facility.

10.2 SEA CARGO TERMINAL INSPECTION SPACE REQUIREMENTS OVERVIEW

10.2.1 General Facility

Cargo inspection facility designs shall be reviewed and approved by the Field Operations Facilities Program Management Office Project Manager (FOF PMO PM) and all CBP stakeholders associated with the project prior to the CFO applying for a permit or requesting construction bid documents. A cargo inspection facility shall be designed to promote safe and efficient inspections and operational support tasks by CBP officers.

The cargo inspection facility shall have workspace and storage space for CBP officers, equipment deployed to nearby inspection points, technicians, and port officials assigned to the local cargo inspection facility. CBP space shall only be located on the ground floor of a building due to seized property restrictions.

10.2.2 Accessibility

The facility shall meet the Architectural Barriers Act Accessibility Standard (ABAAS) for federally occupied facilities to accommodate CBP personnel and/or brokers requiring accessible means of egress and circulation.

10.2.3 Inspection Area

The CFO shall provide CBP with inspection space for examination and potential seizure of cargo. For proper control of transported cargo, this space shall be adjacent to the loading dock or dedicated CBP access points.
CBP officers perform examinations and physical inspections at cargo inspection points using non-intrusive inspections (NII) units, canine enforcement units, and agriculture work areas. Inspection areas shall be located reasonably close to cargo holding areas and CBP access points. At high traffic locations with multiple loading areas and/or warehouses, CBP requires a staging area within or near each area. Space shall also be designated for detention of suspicious cargo for further CBP processing.

Coordinate with the FOF PMO PM for specific layout requirements, which vary by facility.

### 10.2.4 Operational Support Space

The CFO shall provide CBP with space necessary to support CBP's operations (“operational support space”). CBP requires operational support space, including storage space, lavatories, safe drinking water, and parking for government-owned vehicles (GOVs) for the CBP staff at the cargo inspection facility. Operational support space shall meet the requirements provided in this chapter and in Chapter 22, Room Data Sheets. Operational support spaces shall be located adjacent to examination areas and within the CBP-controlled space only.

### 10.2.5 Security Features

The inspection space at a sea cargo terminal shall comply with the current edition of the CBP Security Policies and Procedures Handbook (SPPH). CBP compliance requirements include, but are not limited to, hardware on doors, duress alarms, lighting requirements, hardened construction for public entries and strong rooms, closed-circuit television (CCTV) surveillances, intrusion detection systems (IDSs), access controls, and signage. Refer to the CBP Signage Design Standard for signage requirements.

### 10.2.6 Seized Property/Isolation Storage

The inspection space at a sea cargo terminal shall include space for securely storing detained or seized cargo awaiting CBP disposition or removal. The agriculture inspection space shall also include adequate space for the isolation and removal of quarantined materials.

### 10.3 SPACE REQUIREMENTS MATRIX

Inspection space at a sea cargo terminal requires evaluation of the space requirements matrix. The matrix is a table of rooms and size requirements used for planning the overall building functions and size. During a project-programming phase, the FOF PMO PM will determine which spaces will be used and the quantities applicable to the specific cargo inspection facility in coordination with the Office of Field Operations (OFO). Some spaces are determined by the number of officers assigned to the cargo inspection facility as well as the peak shift requirements.

When there are multiple demands for warehouses/industry trade locations, vessels remain at bay until the dock is available to unload/load cargo at each location.
Table 10-1. Sea Cargo Facility Space Requirements Matrix

<table>
<thead>
<tr>
<th>Room Code</th>
<th>Space Name</th>
<th>Unit of Measure</th>
<th>NASF*Per UM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.0 Inspection Area</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRG-01-08</td>
<td>Examination and Physical Inspection Area</td>
<td>Area</td>
<td>2,240</td>
</tr>
<tr>
<td>CRG-01-02</td>
<td>Agriculture Lab</td>
<td>Each</td>
<td>120 (min)</td>
</tr>
<tr>
<td>CRG-01-03</td>
<td>Agriculture Lab Disposal Room</td>
<td>Each</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-01-12</td>
<td>Enforcement Tool Room</td>
<td>Each</td>
<td>150</td>
</tr>
<tr>
<td>CRG-01-07</td>
<td>Temporary Seized Property Storage Vault</td>
<td>Each</td>
<td>80</td>
</tr>
<tr>
<td>CRG-01-11</td>
<td>Cargo Detention Area</td>
<td>Area</td>
<td>1,000</td>
</tr>
<tr>
<td>CRG-01-13</td>
<td>Personnel Protective Equipment Storage</td>
<td>Each</td>
<td>150</td>
</tr>
<tr>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Inspection Support Space</strong></td>
<td><strong>25%</strong></td>
<td></td>
</tr>
<tr>
<td><strong>2.0 Operational Support</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRG-02-08</td>
<td>CBP Officer Work Area</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-07</td>
<td>CBP Officer Workstation</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-01</td>
<td>Public/Broker Waiting Area</td>
<td>Area</td>
<td>125</td>
</tr>
<tr>
<td>CRG-02-02</td>
<td>Public/ Broker Reception Workstation</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-06</td>
<td>Supervisor’s Office</td>
<td>Person</td>
<td>150</td>
</tr>
<tr>
<td>CRG-02-13</td>
<td>Local Area Network (LAN) Room</td>
<td>Room</td>
<td>180 (min)</td>
</tr>
<tr>
<td>CRG-02-14</td>
<td>Supplemental Local Area Network (SLAN) Room</td>
<td>Room</td>
<td>120 (min)</td>
</tr>
<tr>
<td>CRG-02-15</td>
<td>Intermediate Distribution Frame (IDF)</td>
<td>Room</td>
<td>80 (min)</td>
</tr>
<tr>
<td>CRG-02-09</td>
<td>Supply/Storage Room</td>
<td>Room</td>
<td>100 (min)</td>
</tr>
<tr>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Operational Support Space</strong></td>
<td><strong>25%</strong></td>
<td></td>
</tr>
<tr>
<td><strong>3.0 Staff Support</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRG-03-04</td>
<td>CBP Staff Restroom</td>
<td>Fixtures</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-03-02</td>
<td>Male Locker Room</td>
<td>Lockers/ Fixtures/Shower</td>
<td>Varies</td>
</tr>
<tr>
<td>CRG-03-03</td>
<td>Female Locker Room</td>
<td>Lockers/ Fixtures/Shower</td>
<td>Varies</td>
</tr>
<tr>
<td>CRG-03-01</td>
<td>Staff Break Room</td>
<td>Room</td>
<td>240 (min)</td>
</tr>
<tr>
<td>CRG-03-05</td>
<td>Lactation Support Room</td>
<td>Room</td>
<td>60</td>
</tr>
<tr>
<td>CRG-03-08</td>
<td>Day Kennel</td>
<td>Run</td>
<td>300</td>
</tr>
<tr>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Staff Support Space</strong></td>
<td><strong>25%</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Building Support</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Service Yard</strong></td>
<td><strong>Total Building Support Space</strong></td>
<td><strong>25%</strong></td>
</tr>
<tr>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: NSF = Net Square Feet
* The size of the spaces may deviate from the requirement based on the specific facility POR, other limitations, or FOF PMO PM input.

10.4 FUNCTIONAL AREAS

Adjacencies and process flow within an area are as important as the adjacencies and process flow between areas. Specific requirements for all the rooms listed may be found in Chapter 22, Room Data Sheets. Numbers associated with rooms described above are the room code assigned in the room data sheets. Refer to Chapter 6,
Cargo Inspection Facility, and Chapter 7, Centralized Examination Station, for descriptions of inspection areas, operational support areas, staff support areas, and building support spaces.
CHAPTER 11 - FOREIGN TRADE ZONE DESIGN

11.1 INTRODUCTION

This chapter describes the U.S. Customs and Border Protection’s (CBP) design and construction requirements for foreign trade zone (FTZ) inspection and operational support areas. The application of this Standard, combined with strict security controls, will provide efficient facilitation of international cargo.

These design and construction requirements were developed to guide cargo facility operators (CFOs) and architects/engineers (A/Es) in planning cargo inspection facilities that comply with CBP operational/inspection requirements. These standards were developed to promote situational awareness. This chapter describes the CBP cargo inspection facilities, including:

- Inspection area spaces.
- Operational support spaces.
- Staff support spaces.
- Building support spaces.

11.1.1 Space Requirements

General requirements for new and renovated facilities are provided in specific facility chapters, Chapters 6-12, of this Standard. The amount of space and operational requirements for a specific site, per CBP operational needs, are defined by the project program of requirements (POR). Refer to the detailed room requirements in Chapter 22, Room Data Sheets. The CFO is required to contact CBP in the early project concept phase for guidance and approval in planning the facility.

11.2 FOREIGN TRADE ZONE FACILITY REQUIREMENTS OVERVIEW

11.2.1 General Facility

Cargo inspection facility designs shall be reviewed and approved by the Field Operations Facilities Program Management Office Project Manager (POF PMO PM) and all CBP stakeholders associated with the project prior to the CFO applying for a permit or requesting construction bid documents. A cargo inspection facility shall be designed to promote safe and efficient inspection and operational support tasks by CBP officers.

The cargo inspection facility shall have workspace and storage space for CBP officers, equipment deployed to nearby inspection points, technicians, and port officials assigned to the local cargo inspection facility. CBP space shall be located on the ground floor of a building due to seized property restrictions.

11.2.2 Accessibility

The facility shall meet the Architectural Barriers Act Accessibility Standard (ABAAS) for federally occupied facilities to accommodate CBP personnel and/or brokers requiring accessible means of egress and circulation.

11.2.3 Inspection Area

The CFO shall provide CBP with inspection space for examination and potential seizure of cargo. For proper control of transported cargo, this space shall be adjacent to the loading dock or dedicated CBP access points.
CBP officers perform examinations and physical inspections at cargo inspection points using non-intrusive inspections (NII) units, canine enforcement units, and agriculture work areas. Inspection areas shall be located reasonably close to cargo holding areas and CBP access points. At high traffic locations with multiple loading areas and/or warehouses, CBP requires a staging area within or near each area. Space shall also be designated for detention of suspicious cargo for further CBP processing.

Coordinate with the FOF PMO PM for specific layout requirements, which vary by facility.

### 11.2.4 Operational Support Space

The CFO shall provide CBP with space necessary to support CBP's operations ("operational support space"). CBP requires operational support space, including storage space, lavatories, safe drinking water, and parking for government vehicles (GOVs) for the CBP staff at the cargo inspection facility. Operational support space shall meet the requirements provided in this chapter and in Chapter 22, Room Data Sheets. Operational support spaces shall be located adjacent to examination areas and within the CBP-controlled space only.

### 11.2.5 Security Features

The FTZ shall comply with the current edition of the CBP Security Policies and Procedures Handbook, (SPPH). CBP compliance requirements include, but are not limited to, hardware on doors, duress alarms, lighting requirements, hardened construction for public entries and strong rooms, closed-circuit television (CCTV) surveillances, intrusion detection systems (IDSs), access controls, and signage. Refer to the CBP Signage Design Standard for signage requirements.

### 11.2.6 Seized Property/Isolation Storage

The FTZ shall include space for securely storing detained or seized cargo awaiting CBP disposition or removal. The agriculture inspection space shall also include adequate space for the isolation and removal of quarantined materials.

### 11.3 SPACE REQUIREMENTS MATRIX

Every FTZ requires evaluation of the space requirements matrix. The matrix is a table of rooms and size requirements used for planning the overall building functions and size. During a project programming phase, the FOF PMO PM will determine which spaces will be used and the numbers applicable to the specific cargo inspection facility in coordination with the Office of Field Operations (OFO). Some spaces are determined by the number of officers assigned to the cargo inspection facility as well as peak shift requirements.
### Table 11-1. Foreign Trade Zone Space Requirements Matrix

<table>
<thead>
<tr>
<th>Room Code</th>
<th>Space Name</th>
<th>Unit of Measure</th>
<th>NASF* Per UM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Inspection Area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRG-01-08</td>
<td>Examination and Physical Inspection Area</td>
<td>Area</td>
<td>2,240</td>
</tr>
<tr>
<td>CRG-01-02</td>
<td>Agriculture Lab</td>
<td>Each</td>
<td>120 (min)</td>
</tr>
<tr>
<td>CRG-01-03</td>
<td>Agriculture Lab Disposal Room</td>
<td>Each</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-01-12</td>
<td>Enforcement Tool Room</td>
<td>Each</td>
<td>150</td>
</tr>
<tr>
<td>CRG-01-07</td>
<td>Temporary Seized Property Storage Vault</td>
<td>Each</td>
<td>80</td>
</tr>
<tr>
<td>CRG-01-11</td>
<td>Cargo Detention Area</td>
<td>Area</td>
<td>1,000</td>
</tr>
<tr>
<td>CRG-01-15</td>
<td>Personnel Protective Equipment Storage</td>
<td>Each</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Inspection Support Space</strong></td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td>2.0 Operational Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRG-02-08</td>
<td>CBP Officer Work Area</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-07</td>
<td>CBP Officer Workstation</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-01</td>
<td>Public/Broker Waiting Area</td>
<td>Area</td>
<td>125</td>
</tr>
<tr>
<td>CRG-02-02</td>
<td>Public/Broker Reception Workstation</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-06</td>
<td>Supervisor’s Office</td>
<td>Person</td>
<td>150</td>
</tr>
<tr>
<td>CRG-02-13</td>
<td>Local Area Network (LAN) Room</td>
<td>Room</td>
<td>180 (min)</td>
</tr>
<tr>
<td>CRG-02-14</td>
<td>Supplemental Local Area Network (SLAN) Room</td>
<td>Room</td>
<td>120 (min)</td>
</tr>
<tr>
<td>CRG-02-15</td>
<td>Intermediate Distribution Frame (IDF)</td>
<td>Room</td>
<td>80 (min)</td>
</tr>
<tr>
<td>CRG-02-09</td>
<td>Supply/Storage Room</td>
<td>Room</td>
<td>100 (min)</td>
</tr>
<tr>
<td></td>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Operational Support Space</strong></td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td>3.0 Staff Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRG-03-04</td>
<td>CBP Staff Restroom</td>
<td>Fixtures</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-03-02</td>
<td>Male Locker Room</td>
<td>Lockers/ Fixtures/ Showers</td>
<td>Varies</td>
</tr>
<tr>
<td>CRG-03-03</td>
<td>Female Locker Room</td>
<td>Lockers/ Fixtures/ Showers</td>
<td>Varies</td>
</tr>
<tr>
<td>CRG-03-05</td>
<td>Lactation Support Room</td>
<td>Room</td>
<td>60</td>
</tr>
<tr>
<td>CRG-03-01</td>
<td>Staff Break Room</td>
<td>Room</td>
<td>240 (min)</td>
</tr>
<tr>
<td>CRG-03-08</td>
<td>Day Kennel</td>
<td>Run</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Staff Support Space</strong></td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td>Building Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>Service Yard</td>
<td>Service Containers</td>
<td>Varies</td>
</tr>
<tr>
<td></td>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Building Support Space</strong></td>
<td></td>
<td>25%</td>
</tr>
</tbody>
</table>

Notes: NSF = Net Square Feet

* The size of the spaces may deviate from the requirement based on the specific facility POR, other limitations, or FOF PMO PM input.
11.4 FUNCTIONAL AREAS

Adjacencies and process flow within an area are as important as the adjacencies and process flow between areas. Specific requirements for all the rooms listed below may be found in Chapter 22, Room Data Sheets. Numbers associated with rooms described above are the room code assigned in the room data sheets. Refer to Chapter 6, Cargo Inspection Facility, and Chapter 7, Centralized Examination Station, for descriptions of inspection areas, operational support areas, staff support areas, and building support spaces.
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CHAPTER 12 - INTERMODAL YARD FACILITY DESIGN

12.1 INTRODUCTION

This chapter describes the U.S. Customs and Border Protection’s (CBP) design and construction requirements for intermodal yard facilities’ inspection areas and operational support spaces. The application of this Standard, combined with strict security controls, will provide efficient facilitation of international cargo.

These design and construction requirements were developed to guide cargo facility operators (CFOs) and architects/engineers (A/Es) in planning cargo inspection facilities that comply with CBP operational/inspection requirements. These standards were developed to promote situational awareness. This chapter describes the CBP cargo inspection facilities, including the following spaces:

- Inspection area.
- Operational support.
- Staff support.
- Building support.

12.1.1 Space Requirements

General space requirements for new and renovated facilities are provided in specific facility chapters, Chapters 6-12, of this Standard. The amount of space and operational requirements for a specific site are defined by the project program of requirements (POR), per CBP operational needs. Refer to the detailed room requirements in Chapter 22, Room Data Sheets. The CFO shall contact CBP early in the project concept phase for guidance and approval in planning the facility.

12.2 INTERMODAL FACILITY REQUIREMENTS OVERVIEW

12.2.1 General Facility

Cargo inspection facility designs shall be reviewed and approved by the Field Operations Facilities Program Management Office Project Manager (FOF PMO PM) and all CBP stakeholders associated with the project prior to the CFO applying for a permit or requesting construction bid documents. A cargo inspection facility shall be designed to promote safe and efficient inspections and operational support tasks by CBP officers.

The cargo inspection facility shall have workspace and storage space for CBP officers, equipment deployed to nearby inspection points, technicians, and port officials assigned to the local cargo inspection facility. CBP space shall only be located on the ground floor of a building due to seized property restrictions.

12.2.2 Accessibility

The facility shall meet the Architectural Barriers Act Accessibility Standard (ABAAS) for federally occupied facilities to accommodate CBP personnel and/or brokers requiring accessible means of egress and circulation.

12.2.3 Inspection Area

The CFO shall provide CBP with inspection space for examination and potential seizure of cargo. For proper control of transported cargo, this space shall be adjacent to the loading dock or dedicated CBP access points.

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CBP officers perform examinations and physical inspections at cargo inspection points using non-intrusive inspections (NII) units, canine enforcement units, and agriculture work areas. Inspection areas shall be located reasonably close to cargo holding areas and CBP access points. At high traffic locations with multiple loading areas and/or warehouses, CBP requires a staging area within or near each area. Space shall also be designated for detention of suspicious cargo for further CBP processing.

Coordinate with the FOF PMO PM for specific layout requirements, which vary by facility.

### 12.2.4 Operational Support Space

The CFO shall provide CBP with space necessary to support CBP’s operations (“operational support space”). CBP requires operational support space, including storage space, lavatories, safe drinking water, and parking for government vehicles (GOVs) for CBP staff at the cargo inspection facility. Operational support space shall meet the requirements provided in this chapter and in Chapter 22, Room Data Sheets. Operational support spaces shall be located adjacent to examination areas and within the CBP-controlled space only.

### 12.2.5 Security Features

The intermodal yard facility shall comply with the current edition of the CBP Security Policies and Procedures Handbook (SPPH). CBP compliance requirements include, but are not limited to, hardware on doors, duress alarms, lighting requirements, hardened construction for public entries and strong rooms, closed-circuit television (CCTV) surveillances, intrusion detection systems (IDSs), access controls, and signage. Refer to the CBP Signage Design Standard for signage requirements.

### 12.2.6 Seized Property/Isolation Storage

The CFO shall provide space for securely storing detained or seized cargo awaiting CBP disposition. Refrigerated storage may also be required.

### 12.3 SPACE REQUIREMENTS MATRIX

Every intermodal yard facility will require evaluation of a space requirements matrix. During a project-programming phase, the FOF PMO PM will determine which spaces will be used and the quantities applicable to the specific cargo inspection facility in coordination with the Office of Field Operations (OFO). Some spaces are determined by the number of officers assigned to the intermodal yard facility and peak shift requirements.

The CFO shall provide a staging area for CBP inspections, as determined by CBP.
Table 12-1. Intermodal Yard Facility Space Requirements Matrix

<table>
<thead>
<tr>
<th>Room Code</th>
<th>Space Name</th>
<th>Unit of Measure</th>
<th>NASAF*Per UM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.0 Inspection Area</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRG-01-08</td>
<td>Examination and Physical Inspection Area</td>
<td>Area</td>
<td>2,240</td>
</tr>
<tr>
<td>CRG-01-02</td>
<td>Agriculture Lab</td>
<td>Each</td>
<td>120 (min)</td>
</tr>
<tr>
<td>CRG-01-03</td>
<td>Agriculture Lab Disposal Room</td>
<td>Each</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-01-12</td>
<td>Enforcement Tool Room</td>
<td>Each</td>
<td>150</td>
</tr>
<tr>
<td>CRG-01-07</td>
<td>Temporary Seized Property Storage Vault</td>
<td>Each</td>
<td>80</td>
</tr>
<tr>
<td>CRG-01-11</td>
<td>Cargo Detention Area</td>
<td>Area</td>
<td>1,000</td>
</tr>
<tr>
<td>CRG-01-13</td>
<td>Personnel Protective Equipment Storage</td>
<td>Each</td>
<td>150</td>
</tr>
<tr>
<td>Circulation</td>
<td>Total Inspection Support Space</td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td><strong>2.0 Operational Support</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRG-02-08</td>
<td>CBP Officer Work Area</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-07</td>
<td>CBP Officer Workstation</td>
<td>Workstation</td>
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<td>Area</td>
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</tr>
<tr>
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<td>Public/Broker Reception Workstation</td>
<td>Workstation</td>
<td>80</td>
</tr>
<tr>
<td>CRG-02-06</td>
<td>Supervisor’s Office</td>
<td>Person</td>
<td>150</td>
</tr>
<tr>
<td>CRG-02-13</td>
<td>Local Area Network (LAN) Room</td>
<td>Room</td>
<td>180 (min)</td>
</tr>
<tr>
<td>CRG-02-14</td>
<td>Supplemental Local Area Network (SLAN) Room</td>
<td>Room</td>
<td>120 (min)</td>
</tr>
<tr>
<td>CRG-02-15</td>
<td>Intermediate Distribution Frame (IDF)</td>
<td>Room</td>
<td>80 (min)</td>
</tr>
<tr>
<td>CRG-02-09</td>
<td>Supply/Storage Room</td>
<td>Room</td>
<td>100 (min)</td>
</tr>
<tr>
<td>Circulation</td>
<td>Total Operational Support Space</td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td><strong>3.0 Staff Support</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRG-03-04</td>
<td>CBP Staff Restroom</td>
<td>Fixtures</td>
<td>60 (min)</td>
</tr>
<tr>
<td>CRG-03-02</td>
<td>Male Locker Room</td>
<td>Lockers/ Fixtures/ Showers</td>
<td>Varies</td>
</tr>
<tr>
<td>CRG-03-03</td>
<td>Female Locker Room</td>
<td>Lockers/ Fixtures/ Showers</td>
<td>Varies</td>
</tr>
<tr>
<td>CRG-03-05</td>
<td>Lactation Support Room</td>
<td>Room</td>
<td>60</td>
</tr>
<tr>
<td>CRG-03-01</td>
<td>Staff Break Room</td>
<td>Room</td>
<td>240 (min)</td>
</tr>
<tr>
<td>CRG-03-08</td>
<td>Day Kennel</td>
<td>Run</td>
<td>300</td>
</tr>
<tr>
<td>Circulation</td>
<td>Total Staff Support Space</td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td><strong>Building Support</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>Service Yard</td>
<td>Service Containers</td>
<td>Varies</td>
</tr>
<tr>
<td>Circulation</td>
<td>Total Building Support Space</td>
<td></td>
<td>25%</td>
</tr>
</tbody>
</table>

Notes: NSF = Net Square Feet

* The size of the spaces may deviate from the requirement based on the specific facility POR, other limitations, or the FOF PMO PM input.
12.4 FUNCTIONAL AREAS

Adjacencies and process flow within an area are as important as the adjacencies and process flow between areas. Specific requirements for all the rooms listed below may be found in Chapter 22, Room Data Sheets. Numbers associated with rooms described above are the room code assigned in the room data sheets. Refer to Chapter 6, Cargo Inspection Facility, and Chapter 7, Centralized Examination Station, for descriptions of inspection areas, operational support areas, staff support areas, and building support spaces.
CIVIL AND LANDSCAPE REQUIREMENTS

Cargo Facilities Design Standard
2019 (Draft)

U.S. Customs and Border Protection

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CHAPTER 13 - CIVIL AND LANDSCAPE

13.1 INTRODUCTION

This chapter discusses U.S. Customs and Border Protection’s (CBP) requirements for the civil planning and design of a cargo facility. This chapter elaborates on civil and landscape topics that were covered generally in previous chapters and require further specification for the architect/engineer (A/E). This chapter includes general cargo facility layout and roadway geometry, physical security, weather-related design strategies, site preparation, grading and drainage, roadway paving and traffic control, site utilities and appurtenances, and other details and design strategies pertinent to the A/E.

13.2 DESIGN AND PLANNING

13.2.1 Overview

Cargo facilities shall be designed in coordination with the A/E to effectively develop a cohesive design. The A/E shall be acquainted with the principles outlined in this chapter and be involved in the planning and design process as early as possible in the project development. The cargo facility civil planning and design should follow the requirements provided by the American Association of State Highway and Transportation Officials (AASHTO), Federal Highway Administration (FHWA), state highway departments, and local public works agencies whenever possible. All engineering and landscape architecture contract documents shall be signed and sealed with professional license stamps in the jurisdiction where the project is being constructed. This section covers civil design criteria that shall be integrated in every cargo facility project.

13.2.2 Coordination with State and Local Authorities

Cargo facility planning shall respect local government existing and future infrastructure. Coordination shall occur with a city or state department of transportation at intersections of cargo facility ingress and egress with public roadways for planning traffic signals and signage, road closures, one-way streets, or divided highways. State and local authorities shall be contacted concerning utilities availability and service connections.

13.2.3 Environmental Policy and Regulations

Cargo facility design shall comply with the National Environmental Policy Act (NEPA) and with all federal regulations and requirements.

13.2.4 Civil Layout

The desired outcome of planning the layout of roadways, buildings, landscape, and other structures is the efficient functioning and safety of the cargo facility. The challenge for the A/E is to design a site that encourages expeditious movement of individuals and promotes the safety, visibility, and control of those individuals by CBP officers. The A/E shall also strive to design a roadway layout that does not conflict with the cargo facility site layout guidelines found in Chapter 4, Site Planning.
A. Traffic Alignment Planning

Roadways shall provide safe, controlled, and easily negotiable routes through the site. An appropriate roadway design incorporates a variety of strategies to assure safe and efficient operation. These may include the alignment of roads, placement of gates and barriers, directional signage, and traffic calming devices. These elements create the best roadway configuration. Necessary clearances shall be provided for vehicles to maneuver, negotiate turns, and proceed through lanes. Roadways shall provide for the safety of pedestrians and staff whose circulation takes them through traffic areas. All walkways shall be accessible for persons with disabilities in accordance with current Architectural Barriers Act Accessibility Standards (ABAAS).

The alignment of roadways through the cargo facility should be used to enhance sight lines for the officers, slow traffic, separate types of traffic, and improve the safety of container transport. Roadway geometry should be coordinated with traffic control and security measures (see Section 13.3.4 for specific strategies) to effectively control and guide vehicles within the site and provide protection for officers and facilities. Some facilities may routinely process cargo requiring segregation. As such, surface design shall accommodate access control gates, and/or sufficient space to stage and coordinate the movement of segregated material.

B. Parameters for Roadway Design

Roadway geometry depends on the size and anticipated speed of the vehicles. Commercial vehicles require wider roadways to maneuver.

Special consideration shall be given to designing roadway turns for large commercial vehicles as long as 116 feet plus the length of the tractor unit. Cargo ports with significant commercial operations shall have adequate turning widths for combination trucks with triple semi-trailers WB-29 (WB-96) and combination trucks with turnpike double trailers WB-35 (WB-114), which can reach 118 feet bumper to bumper.

A certified turning radius study shall be provided by the engineer of record to verify that the traffic pattern can be achieved.

Typical lane widths of 12 feet will be used in both commercial and noncommercial roadways. Typical vehicle lengths of 20 feet for non-commercial and 80 feet for commercial traffic can be used to establish the length of queuing lanes, parking bays, and waiting areas.

Standard parking spaces shall be 9 feet wide and 20 feet long, with two-way lanes of 24 feet wide. Parking lots shall meet all ABAAS requirements. Commercial staging/parking spaces shall be 10 feet wide and 80 feet long to accommodate standard 18-wheeler vehicles.

C. Clearance to Obstructions

Nothing shall encroach in the travel way indicated by the solid white or yellow lines, except for yellow traffic bollards. On all roadways, a minimum clearance shall be provided for vehicles to maneuver, negotiate turns, and proceed through lanes without the hazard of crossing curbs. On all streets, a minimum clearance of 1.5 feet shall be provided between the curb face and obstructions, such as utility poles, lighting poles, and fire hydrants. A minimum horizontal clearance of 2 feet shall be provided between the face of the curb and the
edge of roadway signs. A minimum vertical clearance of 7 feet from the ground to the bottom of signs or other roadside obstructions shall be provided.

13.2.5 Physical Security

Security is one of the top priorities of cargo facility design. The type and level of security at a given site depends on whether the site will operate 24 hours per day and 7 days per week (in which case the cargo facility can rely more on officers) or will be closed for some period each day (in which case, the cargo facility will rely more on forced entry protection and surveillance systems). Cargo facilities that do not operate 24 hours per day and 7 days per week have increased monitoring requirements and shall have fences and gates to secure the entire site during off-hours.

The planning of a cargo facility shall allow for future increases in the level of site security. The site layout should be such that additional security barriers, facilities, and staff can be accommodated. The layout should designate space for expanded security measures in the event of a heightened threat.

The layout of approach and pre-primary roadways shall be designed to prevent high speed approaches by vehicles. Bollards and concrete barriers shall be used to control vehicle access and protect officers and infrastructure. Natural or constructed barriers may be accepted as an alternative to protective bollards, such as boulders and ram-proof benches, if permitted by the Office of Professional Responsibility (OPR) and the Office of Field Operation (OFO) and approved by the Field Operations Facilities Program Management Office (FOF PMO) project manager (PM).

Grading of the site shall not impede sight lines from the inspection areas to the perimeter and incoming cargo. Grading shall support the surveillance of the site by closed-circuit television (CCTV) cameras and roving patrols.

Vulnerable components of the facility shall be in protected areas that are not open to the public. In particular, access to electric, gas, and water supply utilities shall be protected against unauthorized tampering.

The site shall have a system of perimeter barriers consisting of walls and fences to prevent surreptitious breach by unauthorized persons. Natural or constructed landscape barriers may be accepted as an alternative to a perimeter fence, if permitted by the OFO, based on the current edition of the CBP Security Policy and Procedures Handbook (SPPH).

Where applicable, provide concrete drainage culverts with grilles consisting of 5/8" steel bars, protected from corrosion, spaced at not less than 6" between bars, and embedded in concrete not less than 4". Grilles should be accessible for inspection and cleaning. Manholes shall be secured from unauthorized access using tamper-proof bolts.

Trees should be separated from a perimeter fence by a distance equal to the radius of the maximum size of the species. Trees shall not be placed near fences or walls where overhanging branches would permit surreptitious entry.

Where snow and ice are to be expected, gates and other operable devices shall operate when adverse conditions occur and shall allow for removal of accumulated snow and ice without damage to the barriers and other devices.
Hardscaping is permitted, but shall not include gravel or rocks that could be thrown. Gravel or rocks used for hardscaping shall weigh 100 lbs. or more on average to discourage throwing.

Refer to the regional Security Management Division (SMD) security specialists and Chapter 21, Physical Security.

13.2.6 Landscape Design

The site shall be landscaped in a way that is attractive, appropriate to its function, compatible with the regional ecology, and complementary to the overall site and building design concept. Landscaping and hardscaping shall not block required sight lines of inspection areas or provide areas where individuals can hide, such as dense foliage over 18 inches high (integrating the crime prevention through environmental design approach). Open dirt and sand areas shall be avoided because blowing dust can impede the operation and increase maintenance on the equipment at the cargo facility. The site design shall include landscape elements to provide windbreaks and shading where necessary/allowed.

The landscaping shall also meet sustainability requirements and serve as part of the storm water management strategy. All existing vegetation shall be evaluated for suitability to remain, and if deemed suitable, shall be protected and incorporated into the design.

A. Plant Materials

Selected plant materials shall be compatible with surrounding vegetation (and regional ecology), durable and hardy, and require little water and maintenance (pruning, spraying, or leaf drop). Trees or shrubs near paving shall not be shallow-root types that can lift pavement. The A/E shall review climate data and soil reports to determine the viability of candidate plant materials. In northern and/or coastal zones, plant materials shall be salt-tolerant. In urban areas, plant materials shall be tolerant of pollution. Low-pollen plants shall be selected to reduce allergy impacts. Grass areas for dogs shall be provided near inspection areas. Fragrant plants shall be used near the kennel area. Planters shall be at-grade or low-profile to avoid obstructing views and potential hiding places. Raised linear planters shall be avoided. When planters are used as security barriers, they shall still be at-grade or low-profile to avoid obstructing views and creating hiding places. Groundcover vegetation is recommended for use on steep slopes.

At cargo facilities in arid climates, plant material selection shall maximize water conservation. Native plant varieties that have proven drought-resistant shall be used.

At facilities in colder climates, native plants resistant to cold weather, ice, snow, and salt de-icing chemicals shall be used.

B. Installation

For all new planting, seeding, and sodding, the contractor shall provide the proper watering and maintenance required during the establishment period.

C. Irrigation

Where required by local climatic conditions, permanent, automatically controlled, high-efficiency irrigation shall be provided in landscaped areas immediately around the cargo facility and at grade-level planters. A
certified irrigation study shall be provided by the mechanical, electrical, plumbing (MEP) contractor, landscape architect, or engineer of record to verify the site requirements and the type of irrigation proposed. Irrigation controllers shall be located within locked storage rooms. Recycled water shall be used for irrigation.

The system shall minimize surface runoff and overspray onto pavement shall be avoided. The design shall allow for future expansion of the irrigation system so that it can be adjusted as plants mature. Irrigation systems shall be zoned so different areas can be watered at different times.

D. Hose Bibbs

Service hose bibbs shall be provided at convenient locations along the building perimeter, spaced at distances no greater than 150 feet. Those subject to public tampering shall have key-wrench controls. Hose bibbs shall also be provided at the room locations per the data sheets.

13.2.7 Weather Related Design Strategies

A. Northern Locations

Cargo facilities in colder climates shall be designed to operate in the extreme winter conditions that exist in most of the areas. Weather conditions can vary from the temperate coastal plains near Seattle to harsh arctic conditions along the Alaskan frontier. Facilities on the high plains and eastern woodlands shall be able to operate during the large snowfalls that routinely occur in these areas. Careful analysis shall be performed of rain and snow precipitation levels, prevailing wind patterns, and snow drift patterns prior to design or modification of a facility. Cargo facility layouts shall be adjusted to allow smooth operation during extreme weather conditions. Security views shall not be compromised when taking the following considerations into account.

Site features incorporated into cargo facilities for heavy snowfall shall include:

- Consideration of water, icicles, and snow shedding from roofs and overhangs when placing walkways and entrances.
- Heated pavement under canopy and at radiation portal monitors (RPMs) and around sensory equipment (loop sensors, cameras etc.).
- Storage/parking space for snow removal equipment.
- Storage for bulk snow and ice removal material.
- Site area for piling snow.
- Roadway and parking lot design to facilitate snow removal, including turn-around spaces.
- Consideration of snowdrift patterns when positioning entrances, building masses, and fences.
- Windbreaks and snow fences for pedestrian walkways.
- Provision for ease of snow removal. Avoid protruding elements in roadways and walkways.
- Protection around fixtures and equipment against damage by snow removal systems.
- Salt and sand resistant surfacing for walkways.
- Underground utility lines below the frost line, as defined in building code tables.
- Avoid sheet drainage over sidewalk areas to prevent icy conditions.
B. Southern Locations

Cargo facilities in warmer climates shall be designed to operate in the extreme heat, sun, and blowing sand conditions that exist along the southern border. Site features incorporated for these conditions include:

- Canopies to provide sun and rain protection for officers.
- Paving and other materials that will not deform in the extreme heat.
- Light-colored horizontal surfaces to reflect sunlight.
- Windbreaks to minimize the amount of sand that blows into operational areas and onto equipment.
- Proper drainage for flash floods.
- Canopies at secondary inspection.
- Trellises or canopies over pedestrian waiting areas.
- Light reflective roofing to reduce heat loads.
- Heat management strategies wherever light emitting diode (LED) lighting is used under canopies or in high heat areas, due to the impacts of heat on LED bulb longevity.

13.2.8 Existing Conditions

A. Geotechnical

The A/E shall research and review available subsurface investigation data and reports to evaluate subsurface conditions. Identify flood hazard areas in accordance with the International Building Code (IBC) Section 1612, Flood Loads.

Soil exploration, testing, and evaluation shall be conducted by a professional geotechnical engineer. The extent of exploration and testing shall be determined based on recommendations with the geotechnical engineer, structural engineer (for foundations), civil engineer (for low impact development, pavements, wells, septic systems, etc.), local storm water permitting agency (for detention ponds), and government reviewers. The results of the subsurface investigation shall be reported on the contract documents, including boring locations, boring logs, groundwater observations, a summary of laboratory test results, and any details required to convey requirements for site preparation.

On a design-bid-build project, a geotechnical investigation report should be provided to the contractor by the government during bidding process.

B. Survey

Unless provided by government personnel, a licensed professional shall seal all surveys in accordance with the applicable requirements of the local regulatory agency.

C. Archeological

In some cases, CBP requires specialized testing by a contractor to determine whether archaeological sites are present, and if so, to determine their extent, character, and significance. If such testing is required, it should be coordinated with geotechnical testing to ensure that testing does not inadvertently damage archeological resources.
13.3 SYSTEMS AND MATERIALS

13.3.1 Site Clearing

Limits of disturbance, limits of demolition, and limits of clearing and grubbing shall be identified in the construction documents. The construction documents should describe the size, density, and type of trees to be cleared and grubbed, items to be salvaged or relocated, staging areas, temporary storage areas, and location.

The erosion control plan shall encompass both short and long-term measures, provided in accordance with local regulatory requirements during both the construction and operation of the project. Erosion and sediment control facilities shall comply with the requirements of the Clean Water Act (33 U.S.C. §§ 1251 et seq.), including the National Pollutant Discharge Elimination System (NPDES) program (40 C.F.R. Part 122). Further, state and local agencies may have additional requirements for erosion and sediment control. To the extent permitted by federal law, cargo facility projects should meet those requirements as part of the construction documents or as a requirement for action by the construction contractor. The A/E shall also follow the applicable NPDES Storm Water Pollution Prevent Plan (SWPPP) guidelines and BMPs.

Strategies to mitigate storm water quality include minimizing exposed soil areas (especially disturbed soil) and using sediment control devices. Specific temporary devices such as silt fences, sedimentation ponds, filtration beds, riprap or slope protection, and temporary seeding and mulching of exposed areas may be necessary.

13.3.2 Grading and Drainage

Site grading addresses the control of drainage, storm water management, and the manipulation of topography to improve a site or address existing topographic challenges. A grading plan should balance cut and fill, minimize environmental impacts caused by storm water runoff, and provide a comfortable and serviceable site.
The following minimum, maximum, and recommended grades shall be observed:

<table>
<thead>
<tr>
<th>Location</th>
<th>Required Grade</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads (Transverse)</td>
<td>Min 1.5%, Max 3.0%</td>
<td>2.00%</td>
</tr>
<tr>
<td>Parking Lots</td>
<td>Min 1.0%, Max 5.0%</td>
<td></td>
</tr>
<tr>
<td>Sidewalks (Longitudinal)</td>
<td>Max 5.0%</td>
<td></td>
</tr>
<tr>
<td>Sidewalks (Traverse)</td>
<td>Max 2.0%</td>
<td></td>
</tr>
<tr>
<td>Paved Area Adjacent to Building</td>
<td>Min 2.0% away from building</td>
<td></td>
</tr>
<tr>
<td>Curb &amp; Gutter (Longitudinal)</td>
<td>Min 0.30%</td>
<td></td>
</tr>
<tr>
<td>Turf Areas</td>
<td>Min 1.0%, Max 18.0%</td>
<td>Min 2.0%</td>
</tr>
<tr>
<td>Primary Inspection Area (Longitudinal)</td>
<td>Max 2.0%</td>
<td></td>
</tr>
<tr>
<td>Primary Inspection Area (Transverse)</td>
<td>Min 1.5%, Max 8.0%</td>
<td>2.00%</td>
</tr>
<tr>
<td>Pre-Primary Inspection Area (Longitudinal)</td>
<td>Max 2.0%</td>
<td></td>
</tr>
<tr>
<td>Pre-Primary Inspection Area (Transverse)</td>
<td>Min 1.5%, Max 3.0%</td>
<td>2.00%</td>
</tr>
<tr>
<td>ABAAS Parking</td>
<td>Max 2.0%</td>
<td></td>
</tr>
</tbody>
</table>

Cargo facility sites should be developed for positive drainage away from all building areas, booths, and work areas. Area drains with grates shall be provided to prevent water from draining toward the canopy and pooling in work areas. Pavement collectors for storm water shall be by curb inlets and gutters or drop inlets. Gutter spread (or inlet approach spread) in roads shall not exceed 10 feet when measured from the face of the curb. Inlets in roads and parking areas shall be sized to capture all runoff and avoid pooling and carryover flow. In calculating inlet capacity, contactors should use a maximum spread of up to the curb height, or 6”, whichever is less.

Incorporation of state department of transportation or government installation public works drainage structure details is advisable, since these are generally familiar to contractors, municipalities, and roadway agencies near the site.

A. Earthwork

The quantity of cut and fill soil should be balanced to the extent possible to create more pleasing transitions of graded areas and minimize the costs of hauling or disposing of soil.

B. Storm Water Management

Consistent with federal law, the storm water runoff rate from the site should be held to its pre-developed rate, using on-site detention or retention facilities. The storm water management plan shall comply with federal, state, and local regulatory requirements including regional or site-specific water-use agreements. Storm water calculations should adhere to state and local agency recommendations. A certified drainage study shall be provided by the engineer of record prior to concept approval to verify that the proposed design meets the requirements of 42 U.S.C. § 17094.
Strategies to mitigate storm water quantity include minimizing paved impermeable areas, maximizing pervious areas and areas with plant cover. If necessary, use detention/retention storage facilities, such as surface ponds or depressions.

Storm water detention shall follow time restrictions per state and local regulations. Detention areas, if ponds, shall be located downwind of occupied facilities.

Sites along the southern border that are prone to flash flooding shall provide proper drainage for flash floods.

13.3.3 Roadway and Paving

Roadways and paved surfaces shall provide safe, easily negotiable, durable routes through the cargo facility. The construction shall withstand the damaging effects of weather, oils, solvents, pollutants emitted from vehicles, and the wear and tear of moving vehicles. Paving of all roadways and service vehicle aprons shall be adequate to support heavy truck traffic. Pavements in cargo facilities shall be designed for projected traffic volumes over the proposed life of the facility.

A. Structural Pavement Design Procedures

Rigid pavement shall be used in all areas. All concrete pavements should be grooved and/or treated according to the FHWA Technical Advisory T 5040.36 to provide traction during inclement weather.

Flexible bituminous pavement may be used when cost is a consideration. All proposed asphalt pavement locations shall be approved by CBP. Areas that may be considered include those with low traffic loads, such as parking lots and service roads. In hot climates, flexible pavement shall not be used on the stopping aprons of incoming lanes. In cold, wet climates, water and oil will slowly reduce the adhesive characteristics of flexible pavement and shorten the useful life of the system.

B. Roadways

Roadway design shall respond to the specific conditions existing at the cargo facility and the performance requirements for the individual roadway. The methods of one of the following organizations shall be used for the design, depending upon the class of roadway system used and whichever is the most stringent:

- AASHTO.
- Portland Cement Association (PCA).
- American Concrete Institute (ACI).
- Asphalt Institute.
- State and local government highway design standards.
- FHWA Technical Advisory: Surface Texture for Asphalt and Concrete Pavements.

The method used for determining the design thickness of pavement shall conform to the local needs and be documented in the project’s design analysis.
C. Parking/Canopy and Inspection Areas

Parking areas may be paved with flexible bituminous materials. Under canopies and inspection areas should be paved with rigid materials for durability. Parking areas, particularly parking stalls, may be paved with porous pavements to comply with the requirements in the Energy Independence and Security Act of 2007, § 438, 42 U.S.C. § 17094. The proposed material/application shall be maintainable at the facility.

D. Sidewalks/Curbs/Islands

All sidewalks shall be constructed with light-colored concrete. Except where specified by the U.S. General Services Administration (GSA) or CBP, curbs shall be mountable and have rounded corners and edges to minimize damage from vehicle tires. Curbs will not be used in the path where officers step in and out of booths to inspect vehicles. Roadways at booths will have sloped pavement to eliminate the curb.

Islands shall be constructed with concrete or pervious paver surfaces and shall not have any grass. The surfaces shall be medium to high slip-resistance and slope away from equipment mounted on the island.

13.3.4 Traffic Control

Traffic flow is managed with traffic control devices (which include active barriers, speed humps/bumps, rumble strips, speed tables, and trigger loop signals), signals, signage, ground markings, and the geometric layout of roadways. Traffic control measures shall be consistent, clear, and promote the safety of individuals, as well as the expeditious movement of vehicles and pedestrians.

A. Traffic Control Devices

Traffic control devices are necessary for regulating, warning, and guiding traffic. These devices are a primary contributor to the safe and efficient operation of the cargo facility. In determining which traffic control devices to use, the design team shall consider the following intersection controls: uncontrolled, yield control, stop control, and traffic signal control. For each of these types, certain physical design criteria shall be used. Other “controls,” such as geometric elements, advance signing, and pavement marking shall be coordinated closely with the type of control used.

Control devices shall be used consistently and uniformly to achieve maximum effectiveness and insure steady traffic flow. Details of the standard devices and warrants under many conditions are found in the Manual on Uniform Traffic Control Devices (MUTCD) or state manual when applicable. The MUTCD (or state manual when applicable) defines the standards used by road managers nationwide to install and maintain traffic control devices on all streets and highways. The MUTCD is published by the FHWA under 23 C.F.R. § 655, Subpart F and is the minimum standard.

Physical enhancements, including bollards, gates, barriers, speed bumps and lighting, shall be incorporated into the planning of all new facilities. Proper setbacks and approaches to these elements will help determine the overall roadway design.

Bollards used to direct traffic flow adjacent to the travel way shall be painted standard safety yellow. Bollards used to protect buildings, booths, and other occupied infrastructure adjacent to roadways shall be rated M-40 at a minimum. Bollards used to protect lane infrastructure shall be rated M-30 at a minimum. All other bollards shall not be M-rated, unless directed by the FOF PMO PM.
B. Signage

For signage guidelines, see Appendix B, Signage.

13.3.5 Markings

Pavement markings shall comply with the MUTCD or state manual when applicable.

13.3.6 Site Utilities

During site design, the location and coordination of utilities (water, sanitary sewer, electricity, gas, communications, etc.) shall be coordinated with other site design features and finalized. The availability and selection of utility sources may vary considerably from site to site.

All utilities (water, sanitary sewer, electricity, gas, data, and communications) shall be located underground.

Design and programming shall identify availability and source(s) of primary utilities, which shall be constant and reliable. If utilities do exist, it shall be determined whether their available capacities are adequate to meet the utility requirements of the cargo facility. Methods to protect utility services from sabotage shall also be considered, in conformance with the current edition of the CBP SPPH.

At each cargo facility location, the following utility requirements shall be considered based on availability, capacity, initial costs, and operating costs.

A. Sanitary

Sanitary sewers include the service pipe and structures from the building(s) to the available utility stub or connection point. Cargo facilities at remote locations may be designed with on-site septic sewer systems. In the design of sanitary sewer systems, contractors shall follow all regulations of the local sanitary sewer authority. The preferred pipe material for on-site sanitary sewer is polyvinyl chloride (PVC) pipe (schedule 80 for direct burial and schedule 40 for concrete encased pipe). If heavy loads or extremely deep burial are encountered, the pipe may be installed in a steel casing or changed to cement-lined ductile iron pipe. At northern border locations, sewer lines shall be located at a depth greater than the frost line.

Where canine enforcement and/or U.S. Department of Agriculture Animal and Plant Health Inspection Service Veterinary Service (USDA APHIS VS) facilities are located at a cargo facility, sanitary waste disposal may require greater diameter waste piping and additional coordination with local authorities.

B. Water

Water utilities include the on-site building services for domestic and fire protection purposes. Remote cargo facilities may be designed with on-site well or cistern systems. Water main sizing shall be done to ensure adequate flow and pressure under the maximum domestic and fire protection demands. The design of the water distribution system shall be in accordance with the requirements of the American Water Works Association (AWWA) standards and Manuals of Water Supply Practices. It shall conform to state and municipal water supply standards. Where standards disagree, the most stringent shall apply. At northern border locations, water lines shall be located at a depth greater than the frost line.
The service connections between building and public water lines shall be coordinated with the local water authority. The service connection shall be placed in a secure enclosure to prevent unauthorized access and potential contamination.

Strategies shall be employed to reduce an aggregate minimum of 20% less potable water than the indoor water use baseline calculated for the building. If the site allows for 4.0kW*hr/m^2*day (average annualized incident insolation on south-facing horizontal plane) plus the facility requires greater than 50-gallons hot water per day, then a solar hot water system shall be required.

C. Fire Hydrants/Service

In general, on-site fire protection, water supply system valves and hydrants spacing and sizing shall be in accordance with Unified Facilities Criteria 3-600-01.

D. Gas

The gas utilities consist of the internal gas distribution service pipes and controls servicing the site from the building(s) to the gas utility connections point. All cargo facilities shall have an emergency generator to provide backup power. Cargo facilities at remote locations shall be designed with on-site generator systems. The design of the service connections shall be done in coordination with the local utility provider. Gas utility connections shall be protected from sabotage or tampering.

13.3.7 Site Improvements

Any project that includes additional hardscape (especially roadways and parking) shall include an engineering study on the impact to storm water drainage. Building materials for site hardscape shall be dependent on the area of the facility in which it is located. Prominent locations in inspection areas and the cargo facility shall be more durable and attractive.

A. Perimeter Fencing

All perimeter fencing shall be non-climbable chain link and be approved by OPR.

CBP prefers a perimeter fence as defined in the CBP SPPH. A rock or masonry fence may be considered in urban areas at cargo facilities with high levels of pedestrian traffic. Rock walls, if incorporated, shall be flat-faced/smooth with no rocks protruding to allow the possibility of climbing. If a cargo facility is adjacent to the border fence along the southern border, the more stringent of the two requirements shall apply to that part of the fence.

Fences should be made of a dark material (preferably polyvinyl coated), as a light material reflects light and decreases visibility.

Special attention shall be given to fence locations where security may potentially be compromised. These locations include tie-ins to border fences, riverfront borders, and crossing drainage structures.
B. Gates

All perimeter gates shall be able to accommodate the largest width vehicle which is expected to pass through the facility, which shall be confirmed by the port director and local authorities.

Gates should be reinforced with cables to increase resistance to a moving vehicle threat. Gates shall also have MUTCD Type III barrier markings.

C. Noise Isolation Walls

Noise isolation walls are acceptable where required to mitigate equipment noise impact on operations.

D. Flagpoles

For cargo facilities that are not open 24/7, or where the flags come down at the end of the day, a walking path is required to access the flagpoles.

E. Site Furniture

Site furniture is included as part of the site design. The selection of site furniture shall be compatible in size and color with the surrounding architecture and landscape design. All seating shall be fixed. Materials for all furniture shall be durable and resistant to vandalism.

Fixed trash and recycling containers shall be located at building entrances and seating areas. No containers shall be located at public entrances to inspection areas.

F. Trash Enclosures

Secure trash and recycling enclosures should be provided at convenient locations throughout the cargo facility, such as building entrances and seating areas. Enclosures shall be in plain view of officers and may not obstruct sight lines. All components of the enclosures shall be fixed in place.
CHAPTER 14 - ARCHITECTURE

14.1 INTRODUCTION

Given its priority mission of homeland security and the challenge of facilitating legitimate trade and travel, U.S. Customs and Border Protection (CBP) manages a large portfolio of buildings at its cargo facilities. CBP is committed to the design of architecturally excellent, environmentally responsible facilities in which to conduct government business safely and serve the public effectively. Federal buildings shall also reach beyond their function to embrace the public at-large, create a sense of community, and instill the trust that is essential to making our democracy successful. This requires an integrated, holistic design and construction approach in which CBP, the design team, stakeholders, and the construction team collaborate fully and communicate effectively. This chapter presents the requirements for the exterior and interior character of cargo facility buildings, as well as the systems and materials used in their construction.

Consistent with other federal agencies, CBP seeks to implement the goals of the Guiding Principles for Federal Architecture set out in the Report to the President by the Ad Hoc Committee on Federal Office Space on June 1, 1962:

Provide requisite and adequate facilities in an architectural style and form that is distinguished and that will reflect the dignity, enterprise, vigor, and stability of the American National Government. Major emphasis should be placed on choosing designs that embody the finest contemporary American architectural thought. Specific attention should be paid to the possibilities of incorporating into such designs the qualities that reflect the regional architectural traditions of that part of the Nation in which buildings are located. Where appropriate, fine art should be incorporated in the designs, with emphasis on the work of living American artists. Designs must adhere to sound construction practice and use materials, methods and equipment of proven dependability. Buildings must be economical to build, operate, and maintain, and should be accessible to the handicapped.

The architecture of cargo facilities shall serve as a gateway for commerce. The form of each cargo facility building flows out of the necessary functions, but does not have to be constrained to featureless structures.

14.2 ARCHITECTURE — EXTERIOR CHARACTER AND ENVELOPE

14.2.1 Planning and Design

A. Overview

Cargo facilities are the physical gateway of goods into the United States. As such, cargo facility buildings shall convey a sense of welcoming, security, and efficiency for all users.

In coastal areas, CBP strongly prefers that designs for all interior spaces shall have elevated heights (using raised floors or foundations), use appropriate materials, and protect equipment and power/data infrastructure to mitigate the adverse effects of floods or spikes in sea level. The architect/engineer (A/E) shall strictly adhere to local building codes.
Ceiling heights shall be 9' minimum, except for detention suite spaces, which shall maintain a uniform height between 9' and 10'. Other spaces, including training, open office areas, and supervisory rooms, may require a taller ceiling height.

Walls and partitions exposed to the border, adjacent to inbound and outbound lanes, where CBP interacts with the public, and where public space adjoins to CBP space shall be bullet resistant. These walls and partitions shall extend from slab-to-slab and shall meet or exceed UL–752 Level 3 for bullet resistance and ASTM F1233 Class 3 Level III for forced entry resistance. When other CBP space is located behind CBP officers interacting with the public, such as a counter position, this bullet resistant wall/partition shall be at the point of public interaction (i.e. bullet resistant transaction window) or behind the officers to protect the other CBP space. If the bullet resistant partition/wall is placed behind the officer interacting with the public, then any structure (counter, podium, half wall, etc.) between the officer and the public shall also be bullet resistant.

Any waivers/deviations to the above bullet resistant requirements shall follow the waiver/deviation process detailed in Section 1.2.6. A written deviation determination from the Security Management Division (SMD) shall be included in the Field Operations Facilities Program Management Office (FOF PMO) waiver/deviation request.

B. Aesthetics

At most cargo facilities, a variety of building types support the mission of CBP: building offices, inspection areas, and support spaces. Inspection spaces are generally adjacent to carrier lines. Therefore, they shall convey the strongest sense of welcome and order. Inspection spaces within the facility shall have a uniform design.

There are no specific requirements for exterior color schemes. The design team should be aware of color requirements for signage and work to integrate building colors with the limited, approved CBP signage colors. Color schemes should be appropriate to environmental conditions and should not contribute to excessive heating loads.

A building’s general appearance shall reflect the site and regional architecture using materials, finishes, and form.

14.2.2 Building Envelope Systems and Materials

A. Wall Systems (Exterior Face)

The exterior face of a cargo facility building shall not use wood or exterior insulation and finishing system (EIFS). Wall materials shall be selected based on local availability and climatic appropriateness. The exterior face shall be one of the following materials and should match existing buildings on the cargo facility site where feasible:

Brick: Masonry pattern and detailing shall be consistent with adjacent buildings. Face brick shall be ASTM C216 Type FBS. Cut, exposed, masonry products shall be held to a minimum and shall be located where they shall have the least impact on the aesthetics of the facility. Clay or shale brick veneer shall be masonry...
units conforming to ASTM C216, Type FBS. Grade SW shall be used for all brickwork. Brick unit sizes shall
be modular.

Concrete: Tilt-up or precast panel. Panel may include brick facing or stamped/decorative pattern. Panels
shall be a minimum 6” thick. Tilt-up panels shall use resin type release agent, containing no materials that
could affect bond of subsequent finishes or natural appearance of exposed concrete surfaces. Aggregates
shall conform to ASTM C33/C33M and shall not contain any substance which may be deleteriously reactive
with the alkalis in the cement. Admixtures shall not include calcium chloride. Precast concrete shall have
a minimum 28-day compressive strength of 4000 psi. Reinforcing bars for precast concrete panels shall
conform to ASTM A767/A767M and ASTM A780/A780M for zinc-coated (galvanized) bars.

Cultured Stone: Masonry veneer pattern and detailing shall be consistent with adjacent buildings. Cultured
stone installation shall follow manufacturer’s specifications.

Ground and Split Face Block: Masonry veneer pattern and detailing shall be consistent with adjacent
buildings.

Fiber-Cement Board: Fiber-cement board siding shall conform to ASTM C1185/C1186. Finished panels shall
be dimensionally stable. Water absorption on the surfaced side shall not exceed 0.20 percent after 24 hours
of submergence in water. Accessories shall be manufacturer’s standard extruded matching color aluminum
moldings.

Metal Wall Panels: Galvanized metal panels may be corrugated or smooth face type. Fasteners may be
exposed or concealed. All metal panels shall be pre-engineered with insulation and factory-finished. Wall
panels shall comply with performance requirements, conforming to AISI S100, without failure due to
defective manufacture, fabrication, installation, or other defects in construction. Wall panels and accessory
components shall conform to the following standards:

- ASTM A1008/A1008M.
- ASTM A123/A123M.
- ASTM A36/A36M.
- ASTM A653/A653M.
- ASTM A463/A463M for aluminum coated steel sheet.
- ASTM A606/A606M.
- ASTM A924/A924M for metallic coated steel sheet.
- ASTM D522 for applied coatings.

Bullet-resistant metal wall panels shall meet or exceed UL-752, Level 3, and ASTM F1233, Class 3-Level
III for forced entry resistance.

B. Wall Systems (Substrate)

Wood framing shall only be used for the smaller cargo facility buildings supported by location and
availability of materials and skilled labor. Lumber shall be Forest Stewardship Council (FSC)-certified.
Framing lumber shall be locally sourced and decay-resistant.
Concrete masonry units (CMU) shall be hollow, reinforced, load-bearing units, conforming to ASTM C90, shall be provided for foundation walls, exterior walls, and shear walls. Slag shall comply with ASTM C989/C989M; Grade 100.

Cold formed metal framing shall include top and bottom tracks, bracing, fastenings, and other accessories needed for installation. Framing members shall have the structural properties indicated. Where physical structural properties are not indicated, they shall be as necessary to withstand all imposed loads. Design framing in accordance with AISI SG-673. Installation shall be in accordance with Department of Revenue (DOR)-approved shop drawings and manufacturer’s installation instructions. Framing components shall comply with ASTM C955 and the following:

- Steel Sheet: ASTM A1003/A1003M, structural grade as required by structural performance, Type H, metallic coated G90.
- Steel Studs: Manufacturer’s standard C-shaped steel studs, of web depths as required by structural performance, punched, with stiffened flanges.
- Steel Track: Manufacturer’s standard U-shaped steel track, of web depths as required by structural performance, un-punched, with straight flanges.

C. Wall Systems (Insulation)

Insulation placed between the steel studs shall be batt or blanket type mineral wool conforming to ASTM C665, Type II. Insulation for wall cavities shall be rigid board-type insulation. Rigid board-type insulation shall be either polystyrene conforming to ASTM C578, Type I or II, Grade 2 or polyurethane conforming to ASTM C591. Masonry veneer facing shall have a minimum 2” rigid insulation in the wall cavity. The drained cavity between the veneer and the insulation shall be a minimum of 1 ½”.

D. Wall Systems (Vapor Barrier)

The vapor retarder shall be polyethylene film conforming to ASTM D2103, 6 mil minimum thickness. A continuous air barrier is needed to control air leakage into, or out of, conditioned spaces. The building envelope shall include all elements of the facility that are exposed to the outside environment or outside environmental conditions such as the roof, walls, floors, and compartmentalized unconditioned portions of the facility, such as garages and negatively pressurized spaces. Builders must permanently seal penetrations through the air barrier, joints in the air barrier, adjoining construction, and transitions to different air barrier materials.

E. Wall Systems (Waterproofing Membrane)

Below-grade waterproofing shall be applied to the positive pressure side of the exterior wall and shall be covered by a protection mat to shield the waterproofing membrane from deleterious effects of construction activities, ultraviolet radiation, or aggressive vegetation.
F. Wall Openings

Main entrance doors shall be an aluminum storefront system; other exterior main doors shall be hollow metal. All exterior windows, doors, frames, and hardware shall comply with the current version of the CBP Security Policy and Procedures Handbook (SPPH). Where information below conflicts with SPPH requirements, the more stringent requirement shall apply. The following wall openings are acceptable for cargo facility buildings.

Hollow metal doors and frames shall comply with ANSI A250.8/SDI 100. Doors and frames shall be constructed of hot dipped zinc coated steel sheet, complying with ASTM A653, commercial steel, Type B, minimum A40 coating weight; factory primed. Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back coating, plaster guards, and shall be grouted solid. Fire-rated openings shall comply with NFPA 80, and the requirements of the labeling authority.

Aluminum storefront doors shall be used for public and staff entry doors only. Swing-type aluminum doors and storefront frames should be sized and designed to withstand minimum design wind load, and with resulting design pressure determined in accordance with the International Building Code (IBC). Deflection shall be limited to not more than 1/175 times the length of the member, with a safety factor of not less than 1.65. The doors need glazing beads, moldings, and trim of not less than 0.050" nominal thickness. Doors should be complete with frames, framing members, subframes, transoms, adjoining sidelights, adjoining window wall, trim, and accessories. Windows should be made with insulating glass and thermal break to achieve no water penetration at a pressure of 8 pounds per square foot of fixed area, and air infiltration not to exceed 0.06 cubic feet per minute per square foot of fixed area at a test pressure of 6.24 pounds per square foot. The finish shall be Architectural Class I anodic coating or American Architectural Manufacturers Association (AAMA) 2605 organic coating.

Overhead doors shall be electric motor-driven coiling or track, insulated, except at unheated storage or inspection locations. Doors shall be remote-controlled from inside the garage and work area (or handheld remote control for small cargo facilities), with manual chain backups and card reader for commercial areas.

All exterior doors shall be provided with weather stripping per American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA) A156.22.

All exterior doors shall be provided with thresholds per ANSI/BHMA A156.21 (non-ferrous metal).

All exterior doors with closers shall be provided with kick plates per ANSI/BHMA A156.6 (non-ferrous metal).

Wall or floor stops for all exterior doors shall not have overhead holder/stops.

Closers should be provided for all exterior doors, all doors opening to corridors, and as otherwise required by codes per ANSI/BHMA A156.4 (series C02000, Grade 1, hydraulic, factory sized, adjustable to meet field conditions).

Panic hardware is required for all exterior doors per ANSI/BHMA 156.3 (heavy-duty touch-pad type, through-bolted mounting). The locations of panic hardware and type shall be coordinated with an Office of Professional Responsibility (OPR) physical security specialist.
Aluminum curtain walls are permitted where bullet-resistant requirements do not prohibit their use. Curtain walls shall use a combination of transparent and opaque panels and shall integrate with the structural, aesthetic, and thermal properties of the general exterior envelope. Contractor shall provide a mockup of one designated curtain wall system unit for the project to be used for a field test of compliance with AAMA 503 Method A and Method B.

Bullet-resistant glazing shall be specified and installed to meet the requirements of the current edition of the SPPH. Bullet resistant glazing shall meet or exceed UL-752 Level 3 for bullet resistance and ASTM F1233 Class 3 Level III for forced entry resistance. Exterior bullet resistant glazing shall be provided to 8' above interior finished floor where required. Exact locations shall be confirmed with the OPR physical security specialist.

All other exterior glazing shall be insulated to meet CBP energy savings requirements, discussed in Chapter 1. Exterior glazing shall be tempered or laminated, low-emissivity glass. Aluminum windows shall comply with the AAMA/National Wood, Window, and Door Association (NWWDA) 101/LS. 2. Minimum performance class shall be heavy commercial. Windows shall have insulating glass and thermal break necessary to achieve a minimum condensation resistance factor (CRF) of 45. Finish shall be Architectural Class I anodic coating or AAMA 2605 organic coating. Operable windows are not permitted except where required by code for egress. Window blinds shall be provided at all exterior windows, except in lobby and at door sidelights. Colors shall be coordinated with the building color palette and provide a uniform appearance from the exterior of the building.

Aluminum louvers, where provided, shall match the finish of nearby windows. Louvers shall be designed to prevent nesting and pest intrusion.

G. Roof Systems

Steep slope roofs are preferred over low slope roofs. The roof system shall be designed and attached to resist wind uplift forces calculated in accordance with American Society Civil Engineers (ASCE) 7. Uplift resistance shall be validated by applicable Factory Mutual, Underwriters Laboratories or ASTM uplift resistance test procedures. All roofing systems shall include 20-year minimum warranties for materials, finishes, and weather-tightness. Roofing design shall follow the recommendations of the National Roofing Contractors Association (NCRA) as contained in the NRCA Roofing and Waterproofing Manual. The design of metal flashing, trim, and roofing shall follow the recommendations of the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) publication, Architectural Sheet Metal Manual.

Sloped roofs shall be of glass fiber shingles or metal standing seam. Sloped roofs shall have an overhang of at least 3'. Shingles shall be a 50-year rated system. Metal roofs systems shall be tested and approved in accordance with ASTM E 1592. Metal roof ribs shall be mechanically seamed and shall have vented ridges to vent the air space below the panels and above the roof insulation. At locations where the average snowfall is more than 4” per year, metal roofs shall have aluminum mechanically fastened snow guards with continuous connectors at all eave locations where pedestrian or vehicle traffic passes below.

Low slope roofs shall have a minimum slope of 1/4” per foot. The roof shall not have any locations allowing pooling of water. Parapets shall be required as necessary for low-slope roofs. Low slope roofs should have all roof drainage at the perimeter of the building. Low slope roofs shall be a single ply EPDM rubber membrane or three-ply modified bituminous membranes. Polyester reinforced cap sheet or walkways shall
be provided on single-ply or modified bitumen roofs where equipment is expected to receive regular service or high maintenance, and where other service conditions warrant.

For steep-sloped roofs with a slope greater than 2:12, the contractor shall use roofing with a minimum solar reflectance index (SRI) of 29. In specially-批准 low-slope locations where roof slope is less than or equal to 2:12, the contractor shall use roofing with a minimum SRI of 78.

Roof leaders shall be contained in the building shell in colder climates, with all piping insulated and heated gutters at colder climate facilities. Green roofs are not permitted on any cargo facility buildings. Photovoltaic shingles are permitted.

14.3 INTERIOR DESIGN - CHARACTER AND MATERIALS

14.3.1 Planning and Design

A. Overview

The interior design and planning of cargo facilities shall reinforce the structured nature of the Office of Field Operations (OFO) such that public spaces are easily distinguishable from non-public spaces. The design of the cargo facility buildings shall facilitate the OFO operational and security objectives, such as facilitation of trade, allowing officers to effectively monitor and conduct the inspection processes, and maintaining a safe environment.

Ceiling heights shall be 9'-0" minimum, except for violator enforcement spaces, which shall maintain a uniform height between 8'-0" and 10'-0". Other spaces, including training, open office areas, and supervisory rooms may require a taller ceiling height.

B. Aesthetics

Furniture, finishes, fixtures, and materials shall be chosen to convey a professional atmosphere that corresponds to the function and character of the space.

- All laboratory and advanced inspection spaces shall be sterile and open to reduce the likelihood of contamination or compromised inspection activities.
- All violator and secure storage spaces shall be clean and solid to deter tampering and make any tampering easily identifiable.
- All work areas shall convey a strong sense of CBP identity and shall be easy to clean and maintain.
- All public areas shall convey a strong sense of welcome and order.

The color scheme at cargo facilities shall convey the traditional OFO color identity. All wooden furniture, such as desks, tables, and chairs shall be dark in color (walnut, cherry, or mahogany). All sofas and chairs, unless all wood, shall have dark blue fabric/material. Any exposed wood shall be dark in color. Carpets and tiles shall also convey the dark blue themes in accenting colors, with white/off-white/cream colored walls.

Pictures should be plentiful throughout the administrative areas reflecting field operations (including employees at work).
For Official Use Only

14.3.2 Systems and Materials

A. Interior Construction

Non-combustible construction is preferable, even where combustible materials are allowed by code. Secure access panels shall be provided where required.

Gypsum board shall comply with ASTM C 1396. Minimum panel thickness shall be 5/8". Provide Type X panels in fire-rated assemblies. Moisture resistant panels shall be installed at locations subject to moisture. Abuse-resistant panels are needed for corridors and other areas of likely high circulation use. Joint treatment shall comply with ASTM C 475. Fasteners shall comply with ASTM C 646. Drywall installation shall comply with ASTM C 840.
Non-load bearing metal studs and furring shall comply with ASTM C 645; stud gauge shall be as required by height and loading, but it shall not be less than 25-gauge. Maximum stud spacing is 16” on center and should have a galvanized finish.

Gypsum board on expanded metal mesh on metal stud shall provide a medium level of protection when reinforced concrete block is not feasible. The use of gypsum board on expanded metal mesh on metal stud shall be approved by the FOF PMO project manager (PM) as a substitute for reinforced concrete block. Expanded metal mesh shall meet ASTM F1267-89 type, Class 1, and shall be 9-10-gauge minimum thickness (flattened) carbon steel in diamond pattern—3.20” maximum long way of design (LWD) and 1.33” maximum short way of design (SWD). Expanded metal mesh shall be fastened to steel stud and top and bottom runners using either screws or weld attachments. Screws or welds shall be spaced at 6” on center maximum, with all corners fastened to the framing. Mesh splice shall occur at studs only. Splice between supports is not permitted unless such splice is welded continuously top to bottom, or mesh is overlapped 3”, and fastened or welded every 6”. Steel framing receiving expanded metal mesh shall be 16-gauge minimum.

Concrete block shall be provided for spaces such as public restrooms, which shall be constructed to hardened standards, but not the medium level of security of violator enforcement spaces. Block shall be hollow brick, 8” depth, complying with ASTM C129, lightweight aggregate (for non-load-bearing walls).

Concrete block for violator enforcement spaces shall be 8” block, fully grouted and reinforced with #5 rebar (minimum 5/8” in diameter). Reinforcement bars shall be spaced no more than 16” on center. The reinforcing is to be anchored into the ceiling and floor a minimum depth of one half the thickness of the adjoining member. Concrete block may alternatively be provided as solid brick.

B. Doors, Frames, and Hardware

All interior doors, frames, and hardware shall comply with the current edition of the SPPH. Where information below conflicts with OPR requirements, the more stringent requirements shall take precedence.

Door frame types indicated in the room data sheets:

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HM-1</td>
<td>Interior, 12-gauge hollow metal, fully welded.</td>
</tr>
<tr>
<td>HM-2</td>
<td>Interior, 12-gauge hollow metal, fully welded, with sidelite.</td>
</tr>
<tr>
<td>HM-3</td>
<td>Detention, 12-gauge, fully welded, grouted into CMU.</td>
</tr>
<tr>
<td>HM-3A</td>
<td>Detention, 3/32”, fully welded, grouted into CMU.</td>
</tr>
<tr>
<td>HM-4</td>
<td>Exterior, 12-gauge hollow metal, fully welded, galvanized.</td>
</tr>
<tr>
<td>HM-5</td>
<td>HM as included with pre-fabricated building.</td>
</tr>
<tr>
<td>AL-1</td>
<td>Exterior aluminum storefront system.</td>
</tr>
<tr>
<td>AL-2</td>
<td>Interior aluminum storefront system.</td>
</tr>
<tr>
<td>SS-1</td>
<td>Exterior, 12-gauge stainless steel, fully welded.</td>
</tr>
<tr>
<td>W-1</td>
<td>Wood frame.</td>
</tr>
<tr>
<td>WS-1</td>
<td>Formed, reinforced and welded steel.</td>
</tr>
</tbody>
</table>

Hollow metal frames (HM-1, HM-2, HM-4, HM-5) shall comply with ANSI A250.8/SDI 100. Frames shall be Level 2, 16-gauge, with continuously welded corners and seamless face joints, factory primed. Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating and plaster guards and shall be grouted solid.
Steel frames for detention rooms (HM-3) shall be 12-gauge steel and grouted into the surrounding wall.

Door types indicated in the room data sheets:

- **A-A**: Wood, full flush, solid core, 5 layers, 36” x 7’-0” x 1-3/4” typical, natural stain finish
- **B-B-01**: Hollow metal, full flush, seamless, 36” x 7’-0” x 1-3/4” typical, 0.053” gauge face, painted finish, Level A, extra heavy duty.
- **B-B-02**: Hollow metal, full flush, seamless, oversized, 42” x 80” x 1-3/4”, 0.053” gauge face, painted finish, Level A, extra heavy duty.
- **B-B-03**: Hollow metal, full flush, seamless, acoustic-rated, 36” x 7’-0” x 1-3/4” Typical.
- **D**: Detention grade, 12 Ga HM, 2”, flush, seamless, 12” sq. vision panel, 180° outswing, 36” x 7’-0” x 2”, Vision panel of polycarbonate laminate, glass-clad polycarbonate or glass laminate. Provide sliding cover over vision panel on ingress side.
- **D-03**: Detention grade, 12 Ga HM, 1-1/2”, half-glass, seamless, 180° outswing, 36” x 7’-0” x 2”, Vision panel of polycarbonate laminate, glass-clad polycarbonate or glass laminate.
- **GL-01**: Aluminum storefront, framed full height Low-E insulated glass, 36” min width.
- **GL-02**: Aluminum storefront, framed partial height, Low-E insulated glass, 36” min width.
- **GL-03**: Aluminum storefront, frameless full height glass, 36” min width.
- **SL-01**: Sliding (integral with inspection booth).
- **SS-01**: Stainless steel, full flush, seamless with 4” x 25” polycarbonate vision panel, 36” x 7’-0” x 1-3/4” with 4” x 25” polycarbonate vision panel.
- **OH-1**: Commercial grade overhead, 12’ - 16’W x 16’H.
- **V-1**: Vault: 12-gauge, hollow metal, full flush, seamless, 36” x 7’-0” x 1-3/4” typical.
- **FE-1**: SD-STD-01.01, Revision G (Amended) (Opaque) 5 min FE.

Door Specifications:

- General: Provide sidelites in doors where reasonable, based on space requirements, privacy requirements and the amount of daylight present. Sidelites shall also be provided where dictated in the room data sheets.
- Hollow metal doors (B-B-01, B-B-02) shall comply with ANSI A250.8/SDI 100. Doors shall be Level 2, physical performance Level B, Model 2, factory primed. Anchors and accessories shall be zinc coated.
- Solid core flush wood doors (A-A) shall have staved lumber or particleboard core and shall be Type II flush doors for interior use conforming to WWDA I.S.1-A with faces of premium grade hardwood veneer. Fire-rated wood doors shall conform to the requirements of UL 10B, ASTM E 152, or NFPA 252 for the class of door indicated and shall be provided with hardware reinforcement blocking in compliance with the manufacturer's labeling requirements and shall not be mineral material similar to the core. A permanent metal label with raised or incised markings shall be attached to indicate the testing agency's name and approved hourly fire rating to hinge edge of each door.
- Steel clad doors for detention rooms (D, D-03) shall be constructed of 2” thick, detention grade, 12-gauge steel that swings in the direction of egress. These doors shall be equipped with polycarbonate or glass laminate 12” x 12” vision panel installed at the standard height for officer checks into the room. Detention room doors shall not have a door closer.
Horizontal aluminum mini-blinds or light limiting blinds shall be installed at all interior and exterior windows in core areas, except windows and storefront in corridors. Blinds shall have 1” wide x 0.1” thick slats with anti-static, anti-microbial polyester baked enamel finish. Contractor shall provide heavy duty 1” x 1 ½” steel headrail, and tubular steel bottom rail finished to match slats.

Door Hardware Specifications:

All door hardware shall comply with the current edition of the SPPH.

Door lockset hardware types indicated in the room data sheets:

A Mortise Lever Lockset, classroom function. NOT permitted on perimeter doors or in combination with card reader and electric strikes.
B Mortise Lever Lockset with thumb turn, entrance function. NOT permitted on perimeter doors or in combination with card reader and electric strikes.
C Cylindrical Lever Lockset, storeroom function.
C-1 Cylindrical Heavy-Duty Bored Lockset, entrance function.
D High Security Mortise Lever Lockset with Deadbolt, storeroom function.
E High Security Mortise Institutional Deadbolt Lever Lock (double cylinder).
F Deadbolt/dead latch.
G FF-L-2890B Rated High Security Electromechanical Lock (X-10 or equivalent).
H High Security Exit Device with deadbolt. Required at CBP perimeter emergency exits.
I Panic Exit Device required at CBP interior emergency exits.
J UL Group 1 Mechanical Combination lock.
K Dummy Set for outside of closet door.
L Standard Lever Lockset, privacy.
M LKM (Lockmaster) 7000 series, FF-L-2890B single motion egress/panic-deadbolt.
N Electrified Mortise Lock with lever set and built-in REX function and key override.
O Electrified Mortise Lock with built-in exit trim function and key override.
P Electrified Mortise Lock & key override function.
Q Detention dead bolt, heavy duty, mortised (MOGUL Key on One Side).
R Padlock FF-P-2827A

Door cylinder hardware types indicated in the room data sheets:

A-1 Cylinder, keyed individually under a CBP master.
A-2 Cylinder, keyed individually NOT under a CBP master.
A-3 Cylinder, keyed under a CBP master, like toilet and physical training rooms.

Door miscellaneous hardware types indicated in the room data sheets:

A Door astragal, required at double doors.
B Automatic door bottom, aka automatic threshold closer.
C Door coordinator, for double doors.
D Door stop, wall- or floor-mounted.
E Door threshold, coordinate with flooring transitions.
C. Windows and Glazing

Glazing Specifications:

- Bullet-resistant glazing shall be specified and installed to meet the requirements of the SPPH. Bullet-resistant glazing shall meet or exceed UL 752 Level 3 for bullet resistance and ASTM F1233 Class 3 Level III for forced entry resistance.
- Tempered glass shall be ASTM C1048, kind PT (fully tempered), Condition A (uncoated), Type I, Class 1 (transparent), Quality q3, conforming to ASTM C1048 and GANA Standards Manual. Color shall be clear. Provide for typical interior glazing.
- Laminated glass shall be ASTM C1172, kind LA, fabricated from two nominal 1/8” (min) pieces of Type I, Class 1, Quality q3, flat annealed transparent glass conforming to ASTM C1036. Flat glass shall be laminated together with a minimum of 0.030” thick, clear polyvinyl butyryl interlayer. The total thickness shall be nominally ¼” min.

Window glazing types indicated in the room data sheets include the following:

GL-01 Low-E Insulating, clear: Standard Low-E coated, double-glazed units for exterior use without tinting, 5/8” or thicker.
GL-02 Low-E Insulating, tinted: Standard Low-E coated, double-glazed units for exterior use with tinting, 5/8” or thicker.
GL-03 Bullet-resistant glazing: As indicated above. Typically, laminated glass for exterior use, and laminated glass or polycarbonate for interior use.
GL-04 Vision panel of ¼” laminated glass as noted above, sliding cover on ingress side.
GL-05 Tempered, mirrored (one-way) glazing, 1/4” (min) as noted above with reflective coating on one side.
GL-06 Laminated, mirrored, (one-way) glazing, 1/4” (min) as noted above with reflective coating on one side.

Interior window types indicated in the room data sheets include the following:

Window Int 01 Interior aluminum storefront, 1/4" tempered glazing.
Window Int 02  Interior aluminum storefront, bullet resistant glazing.
Window Int 03  Interior aluminum storefront, mirrored (one-way) glazing.
Window Int 04  Frameless glass partition system, tempered glazing.
Window Int 05  Hollow metal frame, painted, 1/4" tempered glazing
Window Int 06  Hollow metal frame, painted, laminated, mirrored (one-way) glazing, 1/4" (min).
Window Int 07  [reserved].
Window Int 08  Wood framed interior window, 1/4" tempered glazing.
Window Int 09  Transaction window, Level 3 bullet resistant, SS speaker port or baffle frame.
Window Int 10  Laminated transaction window, with microphone/speaker equipment.

Exterior window types indicated in the room data sheets include the following:

Window Ext 01  Aluminum framed windows, steel reinforced.
Window Ext 02  Aluminum framed windows.
Window Ext 03  Aluminum exterior storefront system, steel reinforced.
Window Ext 04  Aluminum exterior storefront system.
Window Ext 05  Aluminum curtainwall system.
Window Ext 06  Steel framed windows.
Window Ext 07  Clad wood windows.

D. Fencing

Hot-dipped galvanized chain link shall be provided for fenced enclosures. Fencing materials shall be provided conforming to the requirements of ASTM A116, ASTM A702, ASTM F626, and as specified. Accessories shall also be hot-dip galvanized (after fabrication) ferrous-metal components and accessories, except as otherwise specified. Contractors shall provide zinc coating of weight not less than 1.94 ounces per square foot, as determined from the average result of two specimens, when tested in accordance with ASTM A90/A90M. Provide zinc coating conforming to the requirements of the following:

- Pipe: FS RR-F-191/3 Class 1 Grade A in accordance with ASTM F1083.
- Hardware and accessories: ASTM A153/A153M, Table 1.
- Surface: ASTM F1043.
- External: Type B-B surface zinc with organic coating, 0.97 ounce per square foot minimum thickness of acylated polymer.
- Internal: Surface zinc coating of 0.97 ounce per square foot minimum.

In kennel runs, stainless steel or aluminum fencing and fencing accessories should be used.

E. Elevators

Elevators should meet accessibility requirements, and elevator hooks and pads should be specified for occasional moving of furniture. Elevators should be a minimum of 2,000-pound loading capacity.
F. Stairs

Typical stairs are concrete-filled metal pan construction, unless ornamental stairs are part of the design. CBP prefers wire mesh infill panels for open stair and landing rails. All stairs, including fire stairs, should be well detailed and finished, in keeping with finishes in the rest of the project.

G. Flooring

All public and staff entries shall incorporate solutions to mitigate dirt and moisture build-up. Northern border buildings shall incorporate advanced entry mat and drainage systems to prevent the tracking of melting snow and rain. All non-carpeted floors shall meet the slip-resistance guidelines delineated in ANSI/ASSE A1264.2-2006 walking/working surfaces must be slip resistant. Other flooring materials, such as porcelain pavers or polished natural stone, may be used for areas that require an upgraded aesthetic, per FOF PMO PM discretion. All unit-based flooring shall be provided with extra stock per FOF PMO PM discretion. Monolithic flooring, especially in northern border locations, shall be resistant to chemicals per ASTM C 722.

Floor finish types indicated in the room data sheets include the following:

- FF-01 Concrete, troweled, broom finish, exposed exterior and interior utility spaces.
- FF-02 Concrete, troweled, uniform texture and appearance, prepared to receive other finishes.
- FF-03 Concrete, troweled, uniform texture and appearance, sealed, exposed at interior spaces.
- FF-04 Vinyl composition tile (VCT) or rubber tile.
- FF-05 VCT, dissipative.
- FF-06 Athletic resilient.
- FF-07 Ceramic tile.
- FF-08 Porcelain tile.
- FF-09 Carpet tile.
- FF-10 Concrete with seamless epoxy-resin non-slip flooring system, slope-to-floor drain, installed to comply with manufacturer’s requirements specifications.
- FF-10a Concrete, w/ seamless epoxy-resin non-slip flooring system, installed to comply with manufacturer’s requirements specifications.
- FF-11 Concrete, colored or stained with sealer, troweled, uniform texture and appearance.
- FF-12 Concrete, sealed 8", with ¾" reinforcing bars 6" O.C. each way.
- FF-13 [reserved].
- FF-14 Rubber mat (anti-fatigue).
- FF-15 Match adjacent space (at existing conditions).
- FF-16 Raised floor with anti-static VCT.
- FF-17 Anti-static VCT.

Floor Finish Specifications:

Concrete flooring (FF-12) and (FF-11) shall be finished to meet manufacturer’s smoothness requirements. Exposed concrete floors that are not required to have an applied floor finish shall receive a minimum of three coats of the manufacturer’s approved sealer. Colored concrete floor shall be colored pigment integral to the concrete mix.
A seamless epoxy-resin flooring system (FF-10) shall meet Master Painters Institute (MPI) standards and shall be a two part epoxy system. Preparation of the surface shall be per manufacturer’s recommendations. Application of seamless trowel-applied epoxy resin flooring shall require finish coats with a dry-film thickness of not less than 0.1 millimeter 4 mils per coat, minimum. Apply two coats in light industrial areas and three coats in heavy industrial/high traffic areas. Detention processing area shall receive 3 coats. Epoxy shall be low volatile organic compound (VOC).

Resilient VCT (FF-04) flooring shall be provided with moderate durability and low cost. The VCT shall be commercial grade, with pattern through thickness of tile. The VCT with bio-based materials or recycled content shall be used where practical.

Resilient solid vinyl tile shall be used in high traffic areas for floors with high durability, low maintenance, and high slip-resistance requirements. Solid vinyl tile shall be planks or square tiles with protective urethane finish for ease of maintenance.

Resilient rubber tile is needed in high traffic areas for floors with high durability, low maintenance, and high slip-resistance requirements. Rubber tile shall be 100 percent synthetic rubber with through color and slip resistant formulation and surface texture. All manufacturer's standard surface textures and patterns shall be used. The product shall require no-wax cleaning.

In rooms where electrical and voice/data equipment is in use, dissipative VCT (FF-05) shall be used to mitigate the effects of static electricity. Dissipative tile shall be of commercial grade with through pattern and an antistatic additive and shall be installed according to manufacturer's instructions. Dissipative vinyl tile shall meet ASTM F1700 and shall be low VOC. Electrical resistance from floor to ground shall be 100,000,000 ohms when tested in accordance with ASTM F150. Tile shall be 1/8” thickness.

Athletic resilient flooring (FF-06) shall be provided for the physical training rooms and the health and wellness center and shall be a manufacturer's product designed specifically for the purpose, cushioned, and have a waterproof finish suitable to be wet mopped.

Ceramic floor tile (FF-07) shall comply with ANSI A 137.1 and the recommendations of Tile Council of America (TCA) Handbook for Ceramic Tile Installation. Marble threshold shall be installed under doors where a ceramic tile floor meets a different floor finish.

Carpet tile (FF-09) shall meet AATCC 174 test method for anti-microbial properties. A passing carpet tile shall pass either Part I or Part II and Part III. The face and the back of the carpet shall show no growth. Carpet tile shall be 28 oz. tufted weight: 10 stitches/in; shall meet NSF/ANSI 140 Standard and USDA bio-based carpet recommendations.

H. Base

Base types indicated in the room data sheets include the following:

- BF-01 Resilient base, 4" H.
- BF-02 Ceramic tile base 4" H (min).
- BF-03 Wood base.
- BF-04 Integral with seamless flooring, 8" H.
BF-05 [reserved].
BF-06 [reserved].
BF-07 Match adjacent space (at existing conditions).

Base Specifications:

Resilient base (BF-01) shall use job-formed corners in matching height. Rubber base shall conform to ASTM F1861. A 6” high and minimum 1/8” thick wall base shall be used.

Ceramic tile base (BF-02) tiles shall comply with ANSI A137.1 and shall be standard grade tiles. Base shall provide a minimum breaking strength of 125 lbs. with a glass mat water-resistant gypsum backer board, for use as tile substrate in accordance with ASTM C1178/C1178M and a ½” thick glass mat gypsum backer board.

Integral bases (BF-04) shall be extended cove bases, 8” high, and shall use a vinyl or rubber round cap strip and vinyl or rubber fillet strip with a minimum radius of ¾” at the perimeter and fixed vertical interruptions to the flooring. Inside and outside corner protectors of plastic approved by the flooring manufacturer shall be used.

I. Wall finishes and wall covering

Wall finish types indicated in the room data sheets include the following:

WF-01 Gypsum board, ⅝” regular, painted.
WF-02 Gypsum board, ⅝” high impact, painted.
WF-03 Gypsum board, ⅝” Type X, painted.
WF-04 Gypsum board, ⅝” moisture resistant, painted.
WF-05 Gypsum board, ⅝” regular on furring channels, painted, for CMU substrates.
WF-06 Gypsum board, ⅝” regular on resilient channels, painted, for sound isolation assemblies on stud walls.
WF-07 Ceramic tile, full height, install over fiberglass mat gypsum panels.
WF-08 Ceramic tile, partial height, install over fiberglass mat gypsum panels.
WF-09 Fiber reinforced plastic/polymer (FRP), full height, install over gypsum board.
WF-10 Glazed masonry units.
WF-11 Prefinished metal panels.
WF-12 Paint, flat.
WF-13 Paint, semi-gloss.
WF-14 Paint, gloss.
WF-15 Paint, epoxy, semi-gloss.
WF-16 FRT ¾” Plywood on furring channels, painted.
WF-17 Match adjacent space.

Wall Finish Specifications:

Gypsum board (WF-01, WF-02, WF-03, WF-04, WF-05, WF-06) shall comply with ASTM C 1396. Minimum panel thickness shall be 5/8”. Type X panels shall be fire-rated. Moisture resistant panels are needed at
locations subject to moisture. High impact-resistant panels shall be used for physical training rooms and
detention rooms. Boards shall have tapered edges.

Paint and other coatings (WF-12, WF-13, WF-14, WF-15) shall be latex based or epoxy and not have a lead
content over 0.06 percent by weight of nonvolatile content. Coatings shall not contain zinc-chromate or
strontium-chromate, asbestos, mercury, or mercury compounds. Epoxy paint shall be used where surfaces
to be coated require high corrosion resistance, chemical resistance, bond strength, UV resistance, and
toughness. Before applying coating, surface shall be stripped of existing coating, repaired, patched, and
properly cleaned. Finished surfaces shall be free from runs, drops, ridges, waves, laps, brush marks, and
variations in colors.

Glazed concrete masonry units (CMU) (WF-10) shall conform to ASTM C744 using masonry units
conforming to ASTM C90. The facing shall turn over the edges and ends of the unit at least 3/8” in the
direction of the thickness of the unit to form a lip at least 1/16” thick. Bullnose units shall be used along
sills and caps and at vertical external corners including door jambs, window jambs, and other such openings.

Ceramic tile (WF-07, WF-08) wainscot shall be installed in lavatories, restrooms, and shower rooms (not
including showers) to a minimum height of 4’ above finished floor (AFF). Contractors shall comply with
ANSI A 137.1 and the recommendations of TCA Handbook for Ceramic Tile Installation. Substrate for wall
tile shall be mortar setting bed or cement backer board (gypsum board is not acceptable). In showers,
ceramic tile or solid surfacing shall be installed from the top of the shower pan to the ceiling. In break rooms
and laboratories, solid surfacing shall extend from top of countertop/work surface to the underside of wall
cabinets.

Architectural feature walls may be provided, consisting of wood veneer, glass, acrylic, or fabric wall covering
in public lobbies or high-occupancy work areas, if the feature wall does not provide an obstruction to
surveillance or a space for the public to hide.

Fiber-reinforced plastic/polymer (FRP) wall panels (WF-09) shall conform to ASTM D5319. Panels shall be
resistant to rot, corrosion, staining, denting, peeling, and splintering.

Expanded metal mesh shall be used for all rooms built to strong room standards per the current edition of
the CBP SPPH, except those rooms using reinforced concrete ceilings. Expanded metal mesh shall meet
ASTM F1267-89 type, Class 1, shall be #9-10-gauge minimum thickness (flattened) carbon steel in diamond
pattern – 3.20” maximum LWD and 1.33” maximum SWD. Expanded metal mesh shall be fastened to steel
stud and top and bottom runners using either screw or weld attachment. Screws or weld shall be spaced at
6” on center maximum, with all corners fastened to the framing. Mesh splice shall occur at studs only. Splice
between supports is not permitted unless: such splice is welded continuously top to bottom, or; mesh is
overlapped 3”, and fastened or welded every 6”. Steel framing receiving expanded metal mesh shall be 16-
gauge minimum.

Wall construction types indicated in the room data sheets include the following:

Wall-01 Gypsum board on wood stud, sound insulation.
Wall-02 Gypsum board on metal stud, sound insulation.
Wall-03 Gypsum board on #9 (10 Ga) expanded metal mesh on stud, sound insulation.
Wall-04 Gypsum board on metal stud, uninsulated.
Wall-05  Gypsum board 2x panels with #9 (10 Ga) expanded metal mesh on metal stud, sound insulation.
Wall-06  Fiber reinforced backer board on metal stud, uninsulated.
Wall-07  CMU-4" min, fully grouted, Level 3 bullet-resistant.
Wall-08  CMU-8".
Wall-09  CMU-8" · secure · vertical rebar at 16" OC (every block), fully grouted.
Wall-10  CMU-8" · tied into medium security ceiling, per SPPH.
Wall-11  Glazed masonry units.
Wall-12  [reserved].
Wall-13  Insulated metal panels with steel roll frames, Level 3 bullet-resistant.
Wall-14  Corrugated metal walls on metal studs with insulation.
Wall-15  Pre-engineered, insulated metal panels, painted.
Wall-16  Hot dipped (HD) galvanized chain link 14' high.
Wall-17  HD galvanized chain link 12' high.
Wall-18  Match adjacent space.
Wall-19  3/4" fire resistant painted plywood over #9 (10 Ga) expanded metal mesh on metal studs.

Sound isolation ratings indicated in the room data sheets include the following:

STC 45: Minimum sound isolation. Private offices
STC 50: Moderate sound isolation. Very loud sounds can be faintly heard in private offices with conference areas.
STC 55: Excellent sound isolation. All conference, training, and meeting spaces.
STC 60: Superior sound isolation, most sounds inaudible.

J. Ceilings

Non-combustible construction is preferable, even where combustible materials are allowed by code. Secure access panels shall be used where required. The primary ceiling finish shall be 24" x 24" by 5/8" minimum thickness suspended acoustical panel ceiling system, except provide a suspended gypsum board ceiling in entrance lobby, restrooms and showers. Acoustical panels shall have a square edge and a closed pore panel surface. For projects that require a Leadership in Energy and Environmental Design (LEED) rating, provide appropriate panels.

Ceiling finish types indicated in the room data sheets include the following:

CF-01  Gypsum board, ⅝" regular, painted.
CF-02  Gypsum board, ⅝" regular, over #9 (10 Ga) expanded metal mesh, painted.
CF-03  Acoustic ceiling tile, suspended. Standard T-bar system.
CF-04  Exposed structure, no ceiling.
CF-05  Exposed structure, suspended ceiling not permitted.
CF-06  Gypsum board, ⅝" moisture resistant, over #9 (10 Ga) expanded metal mesh, painted.
CF-07  Gypsum board, ¼" moisture resistant, painted.
CF-08  8" concrete with ¼" rebar at 6" O.C, each way.
CF-09  Exposed structure, epoxy paint on metal deck.
CF-10  Pre-engineered, exposed structure, painted.
CF-11  Prefinished metal panels.
CF-12  Special.
CF-13 HD galvanized chain link roof.

CF-14 Match adjacent space.

CF-15 5/8" gypsum board, over #9 (10 Ga) expanded metal mesh, adhered acoustic tile.

CF-16 5/8" gypsum board: acoustical tile not permitted

Ceiling finish specifications:

Acoustical panel ceiling system (CF-03) shall have factory applied mold prevention treatment. Type III (mineral composition with standard washable painted finish) or Type IV (mineral composition with plastic membrane-faced overlay) shall be used in all cases except when the following conditions apply: Rooms with heavy moisture presence shall use a moisture resistant mineral composition unit: areas prone to dirt and staining shall use a composition unit with a plastic film face; and areas subject to impact abrasion shall use an impact resistant composition unit.

Gypsum board (CF-01, CF-02, CF-07, CF-15) shall comply with ASTM C 1396. Minimum panel thickness shall be 5/8". Type X panels shall be used in fire-rated assemblies. Moisture resistant panels are needed at locations subject to moisture and high impact resistant panels are necessary for physical training rooms and detention rooms. Boards shall have tapered edges.

Expanded metal mesh (CF-02, CF-06) shall be used for rooms as specified in the room data sheets and per the most recent edition of the SPPH, except those rooms using reinforced concrete ceilings. Expanded metal mesh shall meet ASTM F1267-89 type, Class 1 standard and shall be installed on interior side of metal stud behind layer of 5/8" gypsum board.

K. Equipment

CBP shall be provided with the opportunity to extend warranties on any furniture, fixtures, and equipment (FFE) provided by the contractor.

Architectural casework shall comply with AWI Section 400, Custom grade cabinets with high pressure decorative laminate finish meeting NEMA LD3 standards. Horizontal laminate: nominal 0.05" thick; vertical laminate: nominal 0.03" thick. Door and drawer edges shall be heavy duty 1/8" extruded polyvinyl chloride with self-locking serrated tongue. Work surfaces and counter shall be high pressure decorative laminate, or solid surfacing material.

Plastic laminate cabinets shall be high durability. All plastic laminates shall meet the requirements of ANSI/NEMA LD 3 and ANSI A161.2 for high-pressure decorative laminates. Vertical general-purpose standard grade plastic laminate shall be used and shall be 0.028” (plus or minus 0.004”) in thickness. All panel substrates not mechanically constrained, shall be backed with a laminate manufacturer's backing sheet to minimize moisture absorption and provide substrate stabilization. Backing sheet thickness shall be 0.020”. Backing sheets shall be provided for all laminated casework components where plastic laminate finish is applied to only one surface of the component substrate. Thermoset decorative overlays (melamine panels) may be used for casework cabinet interior and drawer interior surfaces.

Plastic laminate countertops shall be high durability. All plastic laminates shall meet the requirements of ANSI/NEMA LD 3 and ANSI A161.2 for high-pressure decorative laminates. Horizontal general-purpose standard grade plastic laminate shall be used and shall be 0.048” (plus or minus 0.005”) in thickness. All
panel substrates not mechanically constrained shall be backed with a laminate manufacturer's backing sheet to minimize moisture absorption and provide substrate stabilization. Backing sheet thickness shall be 0.020". Backing sheets shall be provided for all laminated casework components where plastic laminate finish is applied to only one surface of the component substrate.

Stainless-steel countertops shall conform to ASTM A240/A240M. Countertop shall be 16-gauge work surface in type 304 or 316 stainless steel. Countertop finish shall be supported by either a plywood backer or stainless-steel hat channels. Sink bowls shall be fabricated integral per specification. Stainless-steel backsplash shall be 4 1/2" tall by 1" deep, with a 45° return. Cove corner shall be standard on end splashes and backsplash. Up to 12' lengths are permitted without a seam. All joints shall be welded. Front edges shall be rolled. CBP prefers an EPA-approved anti-microbial copper alloy surface as an alternative to stainless steel.

Solid surface countertops shall include 100% acrylic, acrylic/polyester blends, or fiberglass reinforced polymers. This specification should be used for countertops, countertops with sinks, cabinet shelving, table tops, hot and cold break room surfaces, and other applications where a hard, durable, stain resistant surface is desired. Contractors shall use solid polymer material that is a homogeneous filled solid polymer; not coated, laminated or of a composite construction; meeting International Association of Plumbing and Mechanical Officials (IAPMO) Z124.3 and IAPMO Z124.6 requirements. Material shall have minimum physical and performance properties specified. Superficial damage to a depth of 0.01" shall be repairable by sanding or polishing. Material thickness shall be as indicated on the drawings. In no case shall material be less than ⅛” in thickness. Contractors shall submit a minimum 4” x 4” sample of each color and pattern for approval. Samples shall indicate full range of color and pattern variation. Approved samples shall be retained as a standard for this work. Test report results from an independent testing laboratory also must be submitted to attest that the submitted solid polymer material meets or exceeds each of the specified performance requirements.

Typical storage shelving shall be standard open metal storage shelving, and nominal 18” in depth (unless noted otherwise) and shall be provided as part of the construction contract. Shelving finish shall be standard factory applied baked on enamel finish over phosphatized surfaces on all shelving components, except as otherwise indicated.

- Medium duty metal shelving: Adjustable shelving with interchangeable steel components. Shelf loading capacity shall be an evenly distributed load of 200 pounds/linear foot with no deflection across the shelf front flange. Posts shall be provided to support shelf loads without deformation and shall be punched 1.5” on center to accommodate clips for vertical shelf adjustment. Shelves shall be of 18-gauge metal minimum with channel reinforcing of front flange and face and return flange on front and rear of shelves.
- Heavy duty metal shelving: Adjustable shelving with interchangeable steel components. Loading capacity shall be an evenly distributed load of 4,000 pounds/unit with no deflection across the shelf front flange. Angled posts shall be 14-gauge steel minimum provided to support shelf loads without deformation and shall be punched 1.5” on center to accommodate clips for vertical shelf adjustment. Shelves shall be of 16-gauge steel minimum with channel reinforcing of front flange and face and return flange on front and rear of shelves.
Bathroom accessories shall be stainless steel and commercial grade for ease of maintenance. All accessories and fixtures shall comply with the Architectural Barriers Act Accessibility Standards (ABAAS).

- Grab bars shall be 18-gauge, 1¼” outside diameter (O.D.) type 304 stainless steel.
- Toilet partitions shall conform to CID A·A-60003, Type I, floor supported, overhead braced.
- Urinal screens shall conform to CID A·A-60003, wall hung.
- Tissue dispensers shall be stainless steel, equipped with a tumbler lock, spindles to hold two 10” diameter rolls
- Mirrors shall be Type I transparent flat type, class 1·clear glass for mirrors. Glazing quality q1, ¼” thick conforming to ASTM C 1036.
- Paper towel dispensers shall be recessed type 304 stainless steel with hang door with a full-length corrosion resistant stainless steel piano hinge and secure with a tumbler lock.
- Soap dispensers shall be liquid type consisting of a vertical type 304 stainless steel tank with holding capacity of 40 fluid ounces with a corrosion resistant automatic proximity sensor valve that dispenses liquid soap.
- Waste receptacles shall be stainless steel with beveled flanged 12-gallon capacity recessed mounting.
- Baby changing stations shall be surface mounted fabricated of high impact plastic with no sharp edges. Fold down platform concave to the child’s shape, equipped with nylon and Velcro safety straps and engineered to withstand a minimum static load of 250 lbs.
- Shower rod and curtain shall be CID A·A-2398, Style I shower curtain, anti-bacterial nylon/vinyl fabric curtain. Type 304 stainless steel shower curtain rod 1¼” O.D. by 0.049” minimum.
- Soap holder shall be surface mounted type 304 stainless steel.
- Towel bar shall be stainless steel with a minimum thickness of 0.015”. A minimum of ¾” diameter bar per 5/8” square.

Detention equipment shall meet medium detention standards. All detention grade equipment and fixtures shall comply with ABAAS accessibility standards.

- Benches shall be of 12-gauge stainless steel, secured to the wall and/or floor with tamperproof fasteners, with 2” restraining rings or bars. The profile of the bench shall be shaped to eliminate an edge that can be gripped by a detainee, for example a 6” high rounded rectangular tube. All edges shall be deburred.
- Chairs shall be of solid stainless steel, secured to the floor with tamperproof fasteners, with 2” restraining rings or bars. All edges shall be deburred.
- Tables shall be of solid stainless steel, secured to the floor with tamperproof fasteners. All edges shall be deburred.
- Mirrors shall be 20-gauge chrome-plated steel with ½” thick fiberboard backing. Frame shall be seamless 14-gauge, Type 304 stainless steel.
- Modesty panels shall be stainless steel panels, secured to wall and floor only. Modesty panel shall be 36” high, set 12” AFF. Panel shall be placed such that views from surveillance cameras and vision panel in door can view the head and feet only of a detainee on the toilet.
- All stainless-steel edges shall be deburred, rounded, and smooth.
- Grab bars with “full bottom” detention grade shall be 18-gauge, 1¼” O.D. Type 304 stainless steel.

Corner guards for detention and secure areas shall be manufactured from Type 304, 16-gauge stainless steel and shall be field attached non-removable screws. All other corner guards shall be rubber or aluminum.
Rubber corner guards shall be minimum 0.0875" thick at corners field attached using construction adhesive. Corner guards shall be provided from a single source.

The minimum size of white boards in offices, conference rooms, and training rooms is 4’ high x 8’ wide and the minimum size in break areas is 4’ x 4’.

Bulletin boards shall be framed (solid wood or aluminum), minimum 36” high x 60” wide. Bulletin boards in public areas shall be provided with a tamperproof, lockable enclosure.

Display cases shall be provided with adjustable height glass shelving, acrylic doors on wood or aluminum frame. Doors shall be lockable.

Transaction trays shall be stainless steel paper type (9” wide x 2” high) pass-through trays.

Lockers shall be Penco-Patriot or equal, painted metal, with an integrated locking mechanism. 24” wide x 72” high x 24” deep, sloped top, hasp only, (1) ground fault circuit interrupter (GFCI) duplex outlet shall be provided in each locker.

Safes shall typically be GSA class V certified construction 4 drawer container, 49” high x 21” wide x 29” deep. For safes required in seizure storage spaces, please refer to the room data sheet for specific requirements.

Gun lockers shall be 4 ½” high x 6 ¼” wide x 16 ¾” deep recessed, with 16-gauge steel continuous piano hinge. Lockers shall be individually keyed and master keyed pin tumbler snap lock, two keys per compartment, and two master keys per locker. Lockers shall be chemically degreased and powder coat finished.

Gun racks for rifles and shotguns shall be provided as needed to support operations. Racks shall be easily accessible for deployment.

Mail stations shall be furnished of steel. Mail slots shall be a minimum 12” deep x 9” wide x 4” high.

L. Furniture (by others)

Furniture selection and procurement shall comply and meet the standards set forth by the ANSI/Business and Institutional Furniture Manufacturers Association (BIFMA) organizations. References to wood furniture shall be defined as typical mill wood custom A-grade furniture. All furniture shall be durable and long lasting.

Freestanding wood desk-based furniture is used in the private and shared offices. The desk-based furniture shall be capable of structurally supporting overhead desk storage. The supports for the overhead desk storage should not exceed approximately 6” in depth. Furniture arrangements which have office tenants’ backs to the door should be avoided.

Chair arms should have adjustable width and height to avoid interference with officer’s equipment. Chairs should be heavy-duty rated to allow for the extra weight of the officers assigned equipment.
Panel-based system furniture is used for workstations in the common work areas. All the major components of the system shall be suspended from the panels. The panels provide some acoustical and visual privacy in the open office spaces. The workstations shall be electrified.

Clearing barrels shall fully contain discharge from rifles and pistols up to and including 50-caliber (.50 BMG AP). Barrel shall accommodate 50 rounds without maintenance. Barrel shall be of heavy gauge square tube steel construction powder coated for exterior environment.
CHAPTER 15 - STRUCTURE

15.1 INTRODUCTION

This chapter covers general and specific structural engineering requirements applicable to all U.S. Customs and Border Protection (CBP) facilities within a cargo facility. Design considerations for CBP facilities should strive for a long life span and flexibility to accommodate changing operational needs. Deviations from these requirements may be accepted by CBP if a more desirable solution is proposed.

15.2 PLANNING AND DESIGN

15.2.1 Codes and Regulations

All CBP facilities shall be designed to the current version of the International Building Code (IBC) published by the International Code Council (ICC) and all referenced standards within at minimum. In addition, the facilities shall be designed to accommodate all local building code requirements with the more stringent requirements governing the design. All buildings shall be Occupancy Category III unless code compliance dictates otherwise. Additional applicable code references are as follows:

- American Society of Civil Engineers (ASCE) 7 Minimum Design Loads for Buildings and other Structures.
- The ASCE/SEI 41 Seismic Rehabilitation of Existing Buildings.
- American Concrete Institute (ACI) 318 Building Code Requirements for Structural Concrete.
- The ACI 315 Details and Detailing of Concrete Reinforcement.
- The ACI 530 Building Code Requirements for Masonry Structures.
- American Iron and Steel Institute (AISI) North American Specification for the Design of Cold-Formed Steel Structural Members.
- Steel Joist Institute (SJI) Catalog of Standard Specifications and Load Tables for Steel Joists and Joist Girders.
- Metal Building Manufacturer’s Association (MBMA) Metal Building Systems Manual.
- Brick Industry Association (BIA) Technical Notes.

Contractors should analyze, design, detail, and construct buildings as complete systems in accordance with current applicable codes and standards. All structural designs, specifications, and plans shall be sealed and signed by a registered professional engineer in the state of the project.

Contractors should limit deflection of structural members to the allowable of the applicable material standard, e.g., the ACI, AISC and BIA.

CBP facilities are deemed non-essential in terms of IBC classification for new construction.
15.2.2 Anti-Terrorism and Force Protection and Progressive Collapse

Anti-terrorism and force protection and progressive collapse requirements are not required for CBP facilities. Refer to the Office of Professional Responsibility Security Management Division (OPR SMD) for further clarification.

15.2.3 Design Loads

All loads shall be determined by the relevant building codes mentioned in Section 15.2.1, Codes and Regulations. Load types include, but are not limited to dead loads, live loads, snow loads, wind load, earthquake loads, impact loads, and rain and snow loads. All loads shall be determined for each individual site as the loads can vary greatly according to different locations. CBP requires a minimum live load design of 100 psf for non-storage type facilities. Structural requirements for vaults and safes shall follow U.S. Department of Justice (DOJ) requirements. Dead load for roofs shall be additional 5 psf above code requirements to allow for future roof-top equipment installations. Steel plating and lead shrouds are often hung from vertical members for security shielding and shall be planned for under the design load calculations.

15.2.4 Seismic Design/Seismic Upgrading

Seismic loads shall be determined by the relevant building code mentioned in Section 15.2.1, Codes and Regulations. Site specific response spectra and soil data shall be used to determine the seismic loads. The design shall meet all seismic design requirements per code. Special seismic detailing should be included as required, depending on the seismic design category. Remodeling of existing buildings shall follow the Interagency Committee on Seismic Safety in Construction (ICSSC) RP8, which dictates seismic studies for existing buildings. The structural design (including wind, snow, and earthquake) of new buildings, structures, and portions thereof must be in full compliance with the latest edition of the IBC. Unless otherwise specified, all new buildings must be classified as Occupancy Category II structures according to Chapter 16 of the IBC.

15.3 SYSTEMS AND MATERIALS

15.3.1 Overview

The building materials shall be limited to concrete, masonry, steel, and wood. Other building materials and construction types that are allowed per the IBC are allowed with approval from CBP. Regional materials may be used for structure, if security and durability are not sacrificed.

A. Structural Concrete

The following should be provided for structural concrete:

- Form materials to include forms, ties, releasing agents, and void materials.
- Expansion joint filler, accessories, and water stops. Proposed joint fillers shall be submitted for approval.
- Reinforcing bars, dowels, wire ties, and supports. Welded wire fabric shall not be used.
- Concrete that does not have deleterious alkali-silica reactivity (ASR). Reinforcing steel that is ASTM A615 Grade 60. Portland cement ASTM C150, supplement with ASTM C-618 Class F fly ash or ground granulated blast furnace slag (GGBFS). Aggregates shall be normal weight with ASTM C33 gradation.
- Chamfered external corners. Furnish formwork in largest practicable sizes to minimize number of joints, and support reinforcement with approved chairs, spacers, or ties. Pour areas shall not be so large that
they cause shrinkage cracking in slabs. Joint and water stop location layouts should be submitted for approval.

- Curing materials, non-shrink grout, bonding agent, perimeter insulation, capillary moisture barrier, and vapor barrier.

In addition, the following criteria shall be met:

- Concrete shall have a minimum 28-day compressive strength of 4000 psi and shall be reinforced with deformed steel reinforcing.
- Exterior slab on grades shall have a 28-day minimum flexural strength of 600 psi. All concrete that is exposed to freezing and thawing shall contain 6% to 7½% total air content.
- Floor mounted mechanical and electrical equipment shall have a 4" minimum thickness concrete pad. Exterior pads shall have turned down edges embedded a minimum of 6" below adjacent grade.
- Placement of concrete shall follow the requirements of ACI 305R for hot weather and ACI 306R for cold weather. Maximum water/cement ratio shall be 0.45.
- Flatness of concrete shall follow the requirements of ACI 302.1. The architects/engineers (A/E) shall specify FF numbers for all slabs and FL numbers for all slab-on-grade conditions. Overall FF=50 and minimum local value of FF=35 shall apply for all finishes, unless an alternate condition is approved by CBP for certain accessory buildings.
- Exposed concrete walls shall have a smooth, Class B concrete finish minimum. Interior slabs shall have a troweled finish except provide a broom finish if slabs receive tile or a supplemental concrete topping slab. Curing compounds, if used, shall be compatible with floor finish adhesives.
- The A/E shall consider climate conditions such as high humidity, industrial atmosphere, saltwater exposure, or other adverse conditions, when selecting the type of cement and admixtures used in concrete, the concrete cover on reinforcing steel, the coatings on structural members, expansion joints, the level of corrosion protection, and the structural system. Insulation board shall be needed to protect foundations in some climates.
- Where indicated on the room data sheets, concrete slab to slope to drain at a minimum of ¼”/linear ft.

Precast architectural concrete should include the following:

- Precast concrete walls or panels exposed to view shall have an architectural finish with close tolerances and defined requirements for minimization of surface defects.
- Form liners should be used to provide a shallow texture for visual interest.
- Concrete should be protected from staining and discoloration with surface sealers on all exposed areas as early in construction as possible to avoid staining by weather and other trades. Profiles that shall be susceptible to chipping or long-term damage should be avoided.
- Integral color additives may be required to coordinate overall palette of building materials.

The use of pre-cast, pre-stressed, load-bearing concrete walls is discouraged because these wall types restrict flexibility of space and future expansion.

Contractors shall provide colored and sealed finishes to exposed concrete floors using a system that retains original appearances despite with heavy foot traffic and that can be easily maintained without frequent polishing. Optional systems to achieve concrete-colored finish include dry-shake color hardener, Portland cement-based finish topping, or grind/dye/harden/seed/polish systems.
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B. Masonry

All structural masonry materials and workmanship shall be in accordance with the applicable standards and specifications of ACI 530/ASCE 5 Building Code Requirements for Masonry Structures, latest edition.

A full-scale sample panel representing all materials and assembly conditions defined by this section shall be provided.

Mortar shall complement the concrete masonry unit (CMU) color. Units exposed to the exterior shall be integrally colored. The CMU shall be manufactured using carefully selected aggregates to provide desired coloration. Lintel and bond beam units shall be used. Veneer walls with openings should have hot-dipped galvanized steel lintels.

Contractors should conduct continuous inspections. Testing of mortar, grout, and masonry cores prisms and units is required. Testing units for efflorescence is required. Reports should include descriptions of construction requirements and limitations for cold and hot weather construction.

Reinforcement, flashing materials, control and expansion joints, and insulation are needed for all masonry. Exposed joints should be tool finished to a dense concave surface or other acceptable weather joint. Contractors should clean masonry with approved cleaners approved by the unit masonry manufacturer, comply with masonry manufacturer’s directions and technical bulletins, and remove all cleaner residues from masonry.

Cast stone panels should be made of Portland cement, sand, water, and ingredients to achieve natural coloration, including lightweight aggregates and iron oxide. Cast stone panels shall achieve a dry-stack stone masonry appearance. Cast stone accessories should be made by the same manufacturer, including, but not limited to windowsills and wainscot caps. Cast stone also needs an appropriate reinforcing lath and weather resistant barrier as required to prevent moisture penetration and a breather-type masonry sealer with clear finish.

Contractors shall install lath, screeds, flashings, and weather resistant barriers to control moisture penetration and direct moisture out of the assembly. Contractors shall field apply liquid water repellent. Water repellent shall be a clear, penetrating coating that forms a chemical water-repellent bond with cast stone while coating shall be penetrating breathable type.

C. Structural Steel

All engineering, detailing, fabrication, and erection shall conform to AISC specifications and codes. Contractors shall prime paint all structural steel unless noted otherwise in the specifications, clean and touch-up paint after erection, provide erection devices as required by the Occupational Safety and Health Act (OSHA), and remove all erection devices which interfere with permanent architectural/mechanical/electrical/fire-protection elements. In addition, all structural steel permanently exposed to the weather should be galvanized, cleaned, and touched up with abraded primer after erection.

Structural steel shall have the following minimum grades:

- HSS rectangular tubes: ASTM A500, Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Tubing in Rounds and Shapes, Grade B, (Fy=46 ksi).
- High strength bolts: ASTM F3125.
Contractors shall provide mill analyses and test reports. A testing laboratory shall be used for all required
tests and inspections. In addition, contractors shall provide and install all structural steel, tubing, and pipe,
high-strength bolts, carbon bolts, nuts, washers and paint.

Design, fabrication and erection of steel joists shall conform to the Standard Specification and Load Tables for
Steel Joists and Joist Girders by the SJI. Manufacturer’s certification is required. Contractors shall provide all
accessories, extended and special ends, and ceiling extensions as required, and shall not apply construction
loads until bridging and anchorages are completed. The steel joist system shall be engineered by a qualified
licensed professional engineer who is retained by the joist manufacturer. The joist manufacturer shall certify
that the joist system is engineered and manufactured to resist the minimum design loads specified by the
structural engineer of record in conformance with the project specifications and building code.

Contractors must accomplish the following for steel roof decking:

- Provide fire resistance labels, as required, and adjustment plates, closure plates, accessories, and lateral
  and uplift attachment.
- Touch-up shop galvanized coatings after installation.
- Clean field welds and abraded areas.
- Provide 20-guage minimum thickness, galvanized G60 minimum.
- Puddle weld or screw deck flutes to supporting structural framing.

All connections shall be verified by a licensed structural engineer. Welding inspector shall use ultrasonic
testing or any other approved aid to assure the adequacy of the weld. Welding inspector shall be certified to
inspect in accordance with AWS D1.1.

For cold formed steel framing, contractors shall include all material requirements for studs, tracks, bridging,
metal trusses, and other miscellaneous light gauge framing, and identify component size and material
properties for each type and variety. All stud walls shall be non-load bearing and shall be braced if they do
not extend to the structure.

All welds exposed in finish work at fully exposed flat connections shall be ground smooth. Defective or
rejected welds shall be cut out and replaced. Weld fillers shall be used at fillet finished welds. Inspection
and testing of shop and field welding shall be by an approved, qualified welding inspector. The welding
inspector shall certify all reports and make a record of all welds. The welding inspector shall use ultrasonic
testing or any other approved aid to assure the adequacy of the weld. Welding inspector shall be certified to
inspect in accordance with AWS D1.1.

D. Miscellaneous Metals

The contractor shall provide materials, equipment and systems as follows:

- Welds shall be continuous, ground smooth, and flush.
- Exposed joints shall be “hairline” quality.
- Miscellaneous metals include but are not limited to the following: Screens, gratings, shelf angles,
ladders, ladder cage, steel stairs, safety nosings, handrails, guardrails, pipe sleeves, pipe bench
stanchions, pipe post bollards, water heater supports, sill angles, corner guards, access doors and panels,
wire and expanded metal partitions, ornamental grilles, expansion joint covers, seismic joint covers,
trench covers, jamb, and backing for overhead rolling doors.
• Miscellaneous metal shall be separated from dissimilar metals and from products containing lime or other substances, which cause damage (galvanic corrosion).
• Material and method of attachment shall be reported for each substrate encountered for all miscellaneous metal components.
• Contractor shall include finish requirements or reference finishes located in other sections of this document.

15.4 BUILDING TYPES

Where applicable, cargo facilities are enclosed, finished buildings, utilizing any of the aforementioned materials. Typically, cargo facilities shall be designed using wind loading for an enclosed structure, unless per ASCE 7, the building has openings and considered to be partially enclosed. Floor vibration is considered, when designing the floor-framing members. A minimum stiffness is provided to minimize the floor vibration to “slightly perceptible”, on the Modified Reihner Meister Scale, or equivalent vibration perception/acceptance criteria.

15.5 OTHER NON-STRUCTURAL ELEMENTS

15.5.1 Antennae

The project designer shall coordinate with the Office of Field Operations (OFO) and the port director for specific requirements regarding building-mounted or tower-mounted communications antennae and shall provide full design of any associated structures and towers. The preferred location for antennae is not on building roofs. However, where roof-mounting is required, antennae design shall include sufficient mounting points and required loading for roof design.

15.5.2 Other Nonstructural Elements

All nonstructural elements, components, and equipment located within the building or on site shall be anchored and/or braced to withstand vertical and horizontal loading requirements per IBC.
# CHAPTER 16 - LIFE SAFETY AND FIRE PROTECTION

## 16.1 INTRODUCTION

This chapter provides information for the requirements related to life safety and fire protection systems, including general design criteria, codes, systems, products, and commissioning. This chapter provides requirements that shall be incorporated into all project life safety and fire protection systems that are effective in detecting, extinguishing, or controlling a fire event. The primary goal of these requirements shall be to protect human life from a fire event and second, to protect the security of the facility, operations of the facility, and government property.

## 16.2 LIFE SAFETY AND SITE PLANNING AND DESIGN

### 16.2.1 Overview

The requirements of this chapter shall apply to all projects unless otherwise specified by U.S. Customs and Border Protection (CBP). CBP priorities for protection and safety of the cargo facilities are, in order:

1. Life safety of occupants.
2. Security of facility.
3. Operations and accessibility.

### 16.2.2 Codes and Regulations

All portions of the life safety and fire protection systems shall follow the current approved edition of the following codes.

- **International Building Code (IBC), excluding Chapter 10.**
- **National Fire Protection Association (NFPA) – national fire codes (all documents).**
- **NFPA 1 – Uniform Fire Code.**
- **NFPA 101 – Life Safety Code.**
- **NFPA 150 – Fire and Life Safety in Animal Housing Facilities.**
- **CBP Security Policy and Procedures Handbook (SPPH).**
- **Local ordinance, local fire department.**

### 16.2.3 Site Parameters

#### A. Fire Department Vehicle Access

The design team shall provide fire department vehicle access to the project site by access gates. The design shall incorporate fire lane access on at least three sides of the facility. All portions of the facility shall have access to fire lane access in accordance with local ordinances or NFPA 1 when there are no local ordinances.

#### B. Fire Hydrants, Fire Department Connections, and Knox Box

The design team shall provide all portions of the facility with access to fire hydrants and fire department connections in accordance with local ordinances or NFPA 1 when there are no local ordinances. Where no local ordinances exist the fire department connection shall be located within 150’ of an all-weather fire lane and within 150’ of a fire hydrant.
The design team shall consult with the local fire department for the preferred location of the Knox Box. The design shall provide a Knox Box with appropriate keys and/or key access cards.

16.2.4 Life Safety and Means of Egress

The design team shall adhere to NFPA 101 for all means of egress requirements. For determination of building occupancy classification, most projects shall be business with temporary detention facilities (detained less than 24-hours).

A. Interior Finishes

Interior walls, floors, and ceiling finishes shall conform to the requirements of NFPA 101.

B. Fire Retardant Treated Plywood

For new construction, the use of fire retardant treated (FRT) plywood is prohibited, except as permitted by the IBC. For new construction, the FRT plywood shall not be used in any part of the roof or roofing system. For existing construction, the FRT plywood installation shall only be used for replacing damaged FRT plywood. Note that the use of replacement FRT plywood may require additional fire protection measures in accordance with NFPA 13. Use of FRT plywood in telecom room renovations shall be approved by CBP.

C. Spray Applied Fire Proofing

If fire proofing of floor/ceiling or roof/ceiling are required by the code analysis, the design team shall devise a design scheme that obtains the required fire ratings without the use of spray applied fire proofing to the underside of the decking. Only columns, beams, and trusses may receive spray applied fire proofing.

D. Fire Separation

The entire detention area (all violator areas) shall be separated from the public waiting/queuing areas by a one-hour fire rated barrier wall.

E. Kennel Facility

The kennel facility shall be designed in accordance with NFPA 150 – Standard on Fire and Life Safety in Animal Housing Facilities.

16.2.5 Special Security

A. Detention Areas

For detention areas of the facility, detention grade locks shall be used, which are fail secure at all times. Detention areas shall be egress-controlled by authorized key card. Detention areas shall have direct egress without using public waiting/queuing areas. The delayed egress requirements, which are needed for detention spaces, are discussed below.

B. Special Door Hardware

Delayed egress access door hardware may be required by CBP for detention areas and public waiting/queuing areas. The design team shall coordinate with CBP for the use of delayed egress access door hardware, either
15 second or 30 second (maximum) delays. Contractors shall not use CDX-09, but shall use LKM-7000 series FF-L-2890B, which has push/pull capability with single motion releasing action.

C. Windows

At relief quarters/bunk areas, the windows shall code requirements for egress. Windows shall be operable without special tools. Windows may be alarmed but otherwise unrestricted for egress.

D. Heating, Ventilation, and Air-Conditioning Ductwork

When directed by CBP, heating, ventilation, and air-conditioning (HVAC) ductwork shall be zoned separately from ductwork serving public waiting/queuing areas.

16.3 FIRE PROTECTION AND MASS NOTIFICATION/FIRE ALARM PLANNING AND DESIGN

16.3.1 Overview

The requirements of this chapter shall apply to all projects unless otherwise specified by CBP.

16.3.2 Codes and Regulations

All portions of the fire protection and mass notification/fire alarm systems shall follow the current approved edition of the following codes:


B. National Fire Protection Association (NFPA)–National Fire Codes (All Documents):

- NFPA 1 – Uniform Fire Code.
- NFPA 10 – Portable Fire Extinguishers.
- NFPA 150 – Fire and Life Safety in Animal Housing Facilities.

C. CBP SPPH.

D. Local Ordinance: Local fire department.

16.3.3 Fire Protection Systems

A. General Criteria

- Protection system design documents shall be in accordance with the applicable codes. Floor plans shall be provided, showing, including but not limited to the following:

  - Water supply.
  - Backflow preventer.
  - System control assemblies.
  - Location of riser room.
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1. Hazard classifications for each area of the facility.
2. System zone boundaries.
3. Designate areas protected by special fire protection systems.
4. Fire department connections.
5. Post indicator valves.
6. Sprinkler branch lines, feed main piping, and sprinkler locations.
7. Fire pump locations and system layout.
8. Hydraulic remote area, hydraulic nodes, and hydraulic summary placard.
9. Any special design considerations.
   - Design of all specialty fire protection systems (kitchen hood suppression, clean-agent fire suppression systems, etc.).
   - Sprinkler rooms shall be located near other service rooms, with exterior connections within a fenced area.
   - Ensure shelving and cabinets inside of rooms do not block, interfere or hinder sprinklers.

B. Fire Sprinkler Systems

Contractors shall provide fire sprinkler systems that are appropriate for the hazard and in accordance with the applicable codes.

C. Standpipe Systems

Contractors shall provide standpipe systems when required by the applicable codes and in accordance with NFPA 14.

D. Other Fire Suppression Systems

Contractors shall provide other fire suppression systems, when required, by hazard and in accordance with the applicable codes, i.e., wet chemical fire suppression system, clean-agent fire suppression system, etc. All other fire suppression systems shall be coordinated with CBP.

E. Special Conditions

1. Local Area Network
   Contractors shall provide a dry-pipe fire sprinkler system with a supervised isolation control valve for all local area network (LAN)/supplemental local area network (SLAN) rooms and concealed type fire sprinklers with a temperature rating of 212°F. The sprinkler piping for all LAN/SLAN rooms shall be tested at 220 psi minimum for two hours.

2. Pre-Action Fire Sprinkler Systems
   The use of pre-action fire sprinkler systems is prohibited.

3. Hazardous Areas
   For hazardous areas, the fire sprinkler system shall use Extra-Hazard Group 2 classification for the design and hydraulic calculations.
4. Portable Fire Extinguishers
   Contractors shall provide portable fire extinguishers throughout facilities in accordance with NFPA 101 and located or spaced in accordance with NFPA 10.

5. Pipe Painting
   All fire protection system piping shall be cleaned, primed, and painted with one coat of red alkyd gloss enamel paint. Exposed piping in finished areas shall be painted to match adjacent surfaces and provided with 2" wide red alkyd gloss enamel paint bands every 10' and on both sides of wall, ceiling, and floor penetrations. Subject to approval by CBP, painting all exposed piping in finished areas with red alkyd gloss enamel paint may be considered an acceptable alternative to painting bands.

6. System Draining
   Contractors shall terminate all drainage and inspector test connections to the exterior of the building to avoid damage to the landscape. Discharge to the exterior shall not interfere with exiting from the building and water discharge runoff shall not cross an exit discharge path.

7. Elevators
   Contractors shall provide fire protection systems in elevator shafts and machine rooms in accordance with the applicable codes.

16.3.4 Mass Notification/Fire Alarm Systems

A. General Criteria
   Contractors shall provide mass notification/fire alarm system design documents in accordance with the applicable codes. Floor plans should show, including but not limited to the following:

   - Control panel.
   - NAC extender panels.
   - Terminal cabinets.
   - Booster panels.
   - Transceiver.
   - Voltage surge arrestors.
   - Initiating devices.
   - Notification appliances.
   - Supplemental equipment interfacing with the fire alarm system, such as door holders, delayed egress doors, elevator systems, sprinkler system components, etc.
   - Riser diagram.
   - Sequence of operations matrix.

B. Mass Notification/Fire Alarm Systems
   The facility must have a digital or addressable, voice evacuation, site programmable, standalone mass notification or fire alarm system in accordance with the applicable codes. Contractors shall provide audible appliances throughout the facility and in all rooms (either normally occupied or not normally occupied) in accordance with the applicable codes. Visual appliances shall be installed throughout the facility in all public areas and multi-occupant spaces, including corridors, waiting rooms, breakrooms, toilet rooms, along
the exterior of the building, and open offices. The system shall generate both automatic prerecorded and manual (live voice) emergency messages via the audible notification appliances.

C. Mass Notification/Fire Alarm System Reporting

Contractors shall coordinate with the local fire department regarding mass notification/fire alarm system reporting.

D. Other Discipline Coordination

Contractors shall provide interdisciplinary coordination for the fire alarm system connection to the air handling unit (AHU) shutdown, elevator recall, door holder release, etc.

E. Special Conditions

1. Fire Alarm Control Panels

At a minimum, contractors shall provide a fire alarm control panel that can store at least 400 events in the history log. The fire alarm control panel display shall be an integral LCD display with at least character alphanumeric features. Control panels, network access control (NAC) extender panels, terminal cabinets, and booster panels shall be located in air-conditioned space within the cargo facility. Any panel located in public spaces shall be recessed and not be aesthetically obtrusive.

2. Battery Requirements

Contractors shall provide rechargeable lead calcium or sealed lead acid type batteries that are sized for the following:

- To operate the fire alarm system under supervisory conditions for 48 hours and then operate all fire alarm notification appliances for an additional 10 minutes.
- To operate all mass notification appliances for 60 minutes.

3. Smoke Detectors

All smoke detectors shall include an adjustable alarm verification feature, initially set with a 20 second alarm verification. For each smoke detector in ductwork or the AHUs, contractor shall provide a remote test key switch in an easily accessible location.


Break-glass type manual pull stations are prohibited. Contractors shall provide manual pull stations with key reset, which shall be the same key as required for the main fire alarm control panel. Manual pull stations shall be located at all exterior exit doors, except in the detention areas. (See detention suites section below).

5. Wiring, Circuits and Conduit

Each notification appliance circuit shall be loaded not to exceed 80 percent of its rated output. All wiring shall be installed in metallic conduit and run in the vertical or horizontal plane while making all turns at 90º angles. Wiring may be solid or stranded copper, except for speaker circuits, which shall be shielded. Signaling line circuits and initiating device circuits shall be 16-gauge wire at a minimum. All circuits shall be Class A per NFPA 72. At least two notification appliance circuits should exist on each floor.
6. LAN Rooms
   Contractors shall provide complete area smoke detection coverage in all LAN rooms.

7. Wireless Fire Alarm Components
   Wireless fire alarm components and systems are prohibited.

8. Painting
   In unfinished areas and in concealed conditions, contractors shall paint all fire alarm conduit, junction boxes, and covers with one coat of red alkyd gloss enamel paint. In finished areas with exposed conduit, contractors shall paint all fire alarm conduit, junction boxes, and covers to match the room finish, identify “fire alarm” on the inside cover of all junction boxes and put painted red bands ¾” wide at 10-foot intervals on all conduit and at each side of a floor, wall, and ceiling penetration. Anodized red conduit is also acceptable.

9. Elevators
   Smoke and heat detection shall be installed in elevator shafts and machine rooms in accordance with the applicable codes.

10. Building Exterior
    Contractors shall provide complete strobe coverage along the exterior of building and under any canopies. The strobe is intended to provide coverage along the entire exterior of the building, up to and including the 16’ of open space out from the exterior wall.

16.4 SYSTEMS AND MATERIALS

16.4.1 Sprinkler Systems

A. Piping
   Piping 2” and smaller in diameter shall be black steel Schedule 40 with threaded fittings. Piping 2¼” and larger in diameter shall be black steel Schedule 10 with rolled grooved fittings. Threadable, light wall pipe, copper piping, and plastic piping shall not be used. Plain-end fittings shall not be used. Branch line connections to mains may use cut grooved pipe and grooved fittings.

B. Sprinkler Heads
   Contractors shall install quick-response concealed sprinklers in all finished spaces with ceilings that contain electrical equipment or water sensitive equipment. Quick-response upright type sprinklers shall be located in spaces without ceilings that contain electrical equipment or water sensitive equipment. Unless otherwise directed by CBP, contractors shall provide quick-response, semi-recessed pendant sprinklers in all other finished spaces with ceilings. All other spaces without ceilings may have quick-response upright type sprinklers, unless otherwise directed by CBP.

   Extended coverage sprinklers are prohibited. Sprinkler guards are necessary for all sprinklers located less than 7’ above the finished floor.
The following describes the types of sprinklers to be provided:

- Pendant. A sprinkler designed to be installed in such a way that the water stream is directed downward against the deflector.
- Upright. A sprinkler designed to be installed in such a way that the water spray is directed upwards against the deflector.
- Horizontal sidewall. A sprinkler with special deflectors that is designed to discharge most of the water away from the nearby wall in a pattern resembling one-quarter of a sphere, with a small portion of the discharge directed at the wall behind the sprinkler.
- Concealed horizontal sidewall. A sprinkler in which all the body, including the shank thread, is mounted beyond the outer wall plane.
- Vertical sidewall. A sprinkler that has its housing oriented vertically, but discharges water similar to a horizontal sidewall sprinkler.
- Concealed recessed pendant. A sprinkler in which all the body, including the shank thread, is mounted above the lower plane of the ceiling.
- Recessed pendant. A sprinkler in which all the body, other than the shank thread, is mounted within a recessed housing.
- Semi-recessed pendant. A sprinkler in which part of the body, other than the shank thread, is mounted within a recessed housing.
- Detention grade pendant. A sprinkler specially designed for resistance to load-bearing purposes and with components not readily converted for use as weapons.
 CHAPTER 17 - PLUMBING

17.1 INTRODUCTION

This chapter provides information for the infrastructure requirements for plumbing systems to include general design criteria, codes, energy efficiency, systems, controls, and products. This chapter provides specific plumbing requirements applicable to U.S. Customs and Border Protection (CBP) cargo facilities.

17.2 CODES AND REGULATIONS

The standards identified in this section shall be utilized to select the plumbing systems. The design of the CBP portion of each cargo facility shall comply with all applicable codes and regulations of the authorities having jurisdiction over this project. The latest approved versions of the following codes and standards shall be adhered to, unless otherwise noted:

- International Plumbing Code (IPC).
- International Building Code (IBC).
- American Society of Plumbing Engineers (ASPE) standards.
- American Society of Refrigerating and Air-Conditioning Engineers (ASHRAE) standards.
- National Fire Protection Association (NFPA) standards.
- Air-conditioning and Refrigeration (ARI) standards.
- American Society of Sanitary Engineering (ASSE) standards.
- American Water Works Association (AWWA) standards.
- University of Southern California Foundation for Cross-Connection Control and Hydraulic Research Manual (USC FCCCHR).

17.3 ENERGY EFFICIENCY AND SUSTAINABILITY (FOR REFERENCE)

For CBP space provided by cargo facility operators, the following strategies are recommended but NOT required:

17.3.1 Water Saving Strategies and Goals

The building water systems shall be designed to provide a 20% reduction in annual water usage when compared to an Energy Policy Act of 2005, P.L. 109-58, 119 Stat. 594. Water conserving systems, such as gray water recycling and rainwater harvesting, shall be considered if life cycle cost effective. WaterSense® rated, low-flow water conserving fixtures and equipment should be incorporated into all water systems design.

17.3.2 Commissioning

Commissioning practices tailored to the size and complexity of the building and its system components shall be employed to verify performance of building components and systems and help ensure that design requirements are met. This should include an experienced commissioning provider, inclusion of commissioning requirements in construction documents, a commissioning plan, verification of the installation and performance of systems to be commissioned, and a commissioning report.

Commissioning of the following plumbing systems and equipment shall be accomplished for every new or renovation construction project, including but not limited to:

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1. Cleaning/flushing water systems.
2. Cleaning/flushing storm drainage systems.
3. Cleaning/flushing sanitary sewage systems.
4. Cleaning/flushing laboratory drainage systems.
5. Sump pumps and ejectors.
6. Trap primers.
8. Water heaters, water coolers.
11. Lab waste neutralization.
12. Compressed air systems.

17.4 **SYSTEMS AND MATERIALS**

17.4.1 **Special Systems Requirements**

A. Port Office Buildings

In addition to standard drain, waste, vent (DWV) and domestic cold and hot water systems public restrooms and waiting areas shall require vandal proof plumbing fixtures. Toilets and urinals in public areas shall be equipped with recessed sensor operated flush valves. Water coolers shall have recessed or remote chiller units.

B. Inspection Areas

Inspection areas shall be provided with large capacity floor drains connected to an oil/water separator. An emergency drench shower/eye-face wash combination unit shall be provided at inspection bays per data sheets in Chapter 22. At larger facilities with separate agricultural inspection facilities a sink with a high capacity disposal/grinder shall be provided. General staff toilet rooms shall be provided in the Secondary Area or attached to the CBP Agricultural Office. Toilet rooms shall be provided with complete DWV systems and domestic cold and hot water.

C. Canine Facilities

Kennel buildings and adjoining outdoor space shall be equipped with freeze proof hose bibs where temperatures approach 32 °F. High pressure water is required for hose bibs and shall be provided by point of use booster pump systems. All domestic water systems to the canine facilities shall be equipped with backflow preventers to protect against contamination of the water source. In areas where floor drains are required, the floor slab shall slope toward the drain in the center of the room or to a trough along the edge of the canine run for wash-down. Additionally, the drainage system in the animal housing area shall accommodate canine waste, which requires appropriate treatment and disposal. Consultation with the state’s veterinarian office is advised. Disposal of animal waste shall be coordinated with local government. Most municipalities allow kennels to tie their waste line to the main sewer line after seeking permission.
from the government. Septic systems are a viable option when connecting to the municipal system is not allowed. Septic tanks shall accommodate animal waste and cleaning solutions.

D. Detention

Detention areas shall be provided with detention-grade combination toilet/lavatory/bubbler with toilet paper recess, electronic flush control, and flush control switch located outside room. Unit shall be rear discharge into an accessible chase with service door located outside room. The chase requires a penal detention grade access door panel with a penal detention grade lock. The floor drain shall have a tamperproof cover near toilet. Floor slab shall slope to drain. Access to toilet shall comply with the Architectural Barriers Act Accessibility Standard (ABAAS). An ANSI-compliant eye wash station and hand wash sink is needed near the holding rooms. Vandal-proof hose bib shall be placed in the corridor equally spaced among holding rooms.

E. Laboratory

Laboratories shall be equipped with a stainless steel sink and stainless steel backsplash and a minimum of 12-inch-deep bowls. A 3-horsepower minimum disposal/grinder unit with emergency cutoff panic button shall be installed. The minimum drain size shall be 4" with a cleanout trap. An ANSI-compliant emergency eye/face wash unit must be included. Where a steam sterilizer is used, appropriate water supply filtration system and drip pan and drain are needed to prevent deterioration of the sterilizer equipment.

17.5 MATERIALS:

All materials and systems specified below coordinate with notations in Chapter 22, Room Data Sheets.

- Piping for drainage, waste, and vent systems shall be cast iron with heavy-duty no-hub couplings above grade and cast-iron bell and spigot heavy-duty below grade.
- Domestic water piping shall be copper pipe or tube Type L.
- Piping in laboratories shall be corrosion resistant and suitable for the application.
- Valves 2" and smaller shall be full port brass or bronze.
- Valves 2½" and larger shall be steel.
- Fixtures shall be commercial grade and meet IPC and industry standards.

LAV-1 Wall Hung Basin — Battery Powered Faucet

- Basin: 20" high x 18" wide x 8¾" deep.
  - Vitreous china.
  - Wall hung, for carrier with concealed arms with CP escutcheon.
  - Front overflow.
  - Faucet ledge, 2" clearance from wall.

- Battery powered faucet FC-2:
  - 4" centerset.
  - Brass construction.
  - 0.5GPM maximum flow non-aerating laminar flow spray outlet.
  - Infrared sensor on faucet base.
• Below deck solenoid valve with serviceable strainer filter.
• Module control assembly with splash proof junction box and mounting kit, below deck, in module control assembly.

- Point of use thermostatic water mixing valve:
  • Bronze body.
  • Temperature adjustment by using a hex wrench.
  • \( \frac{3}{4} \)" inlet compression fittings with stainless steel 20" flexible hose and \( \frac{1}{2} \)" male national pipe thread (MNPT) outlet connection.
  • Built-in checks housed in enclosure.
  • Set valve temperature at 114.8°F.
  Note: Provide tee, adaptors, and flexible copper tubing to suit installation.

- Open grid drains:
  • Chrome-plated cast brass one-piece top.
  • \( \frac{1}{16} \)" thick.
  • Tubular 1¼" tailpiece.

- Faucet supplies:
  • Chrome finish.
  • Polished brass.
  • Commercial duty \( \frac{1}{4} \) (one-quarter) turn ball valve angle stop.
  • \( \frac{3}{4} \)" I. D. Inlet x 5" horizontal extension tubes, combination V. P.
  • Loose key handle, escutcheon, and flexible copper riser.
  • Heavy cast brass adjustable body.
  • \( \frac{1}{4} \)" inlet.
  • Shallow wall flange.
  • Heavy brass nipple with heavy brass set screw flange.

- Single Carrier:
  • Mounted on concrete floor.
  • Heavy gauge epoxy coated steel offset uprights with welded feet.
  • Adjustable concealed epoxy coated cast iron arms.
  • Minimum space required for one unit: 4".
  • Minimum space required for two-to-six (2 – 6) units in a row: 6" finished metal stud wall to back of pipe space.

LAV-1A Wall Hung Basin–Battery Powered Faucet

- Wheelchair basin:
  • 20 1/16" high x 27" wide x 6½" deep.
  • Vitreous china.
  • Wall hung, for carrier with concealed arms.
  • Front overflow.
  • Faucet ledge.
- Battery Powered faucet FC·4:
  - 4" centerset.
  - Brass construction with vandal resistant pressure compensating 0.5 GPM maximum flow.
  - Non-aerating multi-laminar flow spray outlet.
  - Infrared sensor on faucet base.
  - Below deck solenoid valve with serviceable strainer filter.
  - Module control assembly with splash proof junction box and mounting kit.
  - Below deck, in-module control assembly.

- Point of use thermostatic water mixing valve:
  - Bronze body.
  - Temperature adjustment by using a hex wrench.
  - ¾" inlet compression fittings with stainless-steel 20" flexible hose and ½" MNPT outlet connection.
  - Built-in checks housed in enclosure.
  - Set valve temperature at 114.8°F.

Notes:
- Provide tee, adaptors, and flexible copper tubing to suit installation.
- Offset open grid drain, chrome-plated cast brass one-piece top, 1/16" (1.5mm) thick, tubular 1¼" tailpiece.

- Faucet supplies:
  - Chrome finish polished brass.
  - Commercial duty ¼ (one-quarter) turn, ball valve, angle stop, ½" I. D.
  - Inlet x 5" horizontal extension tubes, combination vent pipe.
  - Loose key handle, escutcheon and flexible copper riser.
  - Heavy cast brass adjustable body.
  - 1¼" inlet.
  - Shallow wall flange.
  - Heavy brass nipple with heavy brass set screw flange.
  - Vandal-resistant sanitary covering.
  - Flexible seamless molded closed-cell PVC resin, formulated with anti-microbial additive to limit the growth of fungus and bacteria, to exposed piping (to protect against heat/contusions) as per local codes.
  - Mounted on concrete floor, concealed arms with sliding adjustable arm brackets.

MS·1 Service / Mop Sink-Two Handle Faucet

- Square service/mop sink:
  - 24" high x 24" wide x 10" deep.
  - Floor mounted.
  - Molded stone.
  - Plain curbs.
  - Stainless-steel drain with strainer.
  - 3" outlet.

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Wall mounted, two-handle faucet FC-3:
- Center-hole only.
- Chrome-plated.
- Cast brass body.
- Integral stops.
- Spout with atmospheric vacuum breaker and bucket hook.
- Lever handle.
- Top brace.

Bumper Guard:
- Type 304 stainless-steel.

Mop hanger:
- Type 304 stainless-steel.
- Constructed of 22 gauge.

Back splash panel:
- Stainless-steel panel.

SH-1 Shower Valve, Head, and Hand Shower

Shower:
- Pressure balancing mixing valve.
- Brass body.
- Pressure balancing, washerless, ceramic, drip-free disc valve cartridge.
- Integral hot limit stop.
- Screwdriver stops.
- Brass wall escutcheon.
- Metal lever handle.
- 2.5 U.S. Gal. flow per minute adjustable showerhead.
- Cast brass arm.

Diverter valve trim:
- Metal lever handle.
- 2-way, n-wall diverter valve.

Soft spray hand shower:
- 2.5 GPM maximum flow rate.
- Spray pattern adjust from conventional spray to gentle flow to massage.
- Rubber nozzles.

Hand shower vacuum breaker:
- Between supply outlet and personal shower hose.

FD-1 Floor drain:
- 2" outlet.
- Epoxy-coated cast iron.

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1. Anchor flange.
2. Adjustable round nickel bronze strainer.
3. Reversible clamping collar with primary and secondary weep holes.

- **P-Trap:**
  - Same material as the connecting pipe drain.

**Notes:**
- Provide access to faucet/valve.
- Comply with local codes for shower control location and trim kit requirements.
- Comply with local codes for complete grab bar positions, shower control location and faucet trim kit requirements.
- Provide service stops.

**SK-1 Countertop Mount Double Sink-Two Handle Faucet**

- Double bowl rectangular countertop mount sink:
  - 3-hole.
  - 8" centerset.
  - 20-13/16" high x 31¼" wide x 10" deep.
  - Spillway.
  - Back ledge.
  - Type 316, 18-gauge stainless-steel.
  - Satin finish rim and bowl mounting kit.
  - Fully undercoated to reduce condensation and resonance.
  - Factory applied rim seal.
  - 3½" crumb cup waste assembly.

- Two handle faucet FC-1:
  - 8" centerset, cast brass body, gooseneck swing spout, with vandal-resistant pressure compensating 1.5 GPM max flow, aerator outlet, red and blue indexed wrist blade handles.

- Point of use thermostatic water mixing valve:
  - Bronze body.
  - Temperature adjustment by using a hex wrench.
  - ¾" inlet compression fittings with stainless-steel 20" flexible hose and ½" MNPT outlet connection.
  - Built-in checks.
  - Housed in 5" high x 3⅜" wide x 3-3/16" deep enclosure.
  - Valve temperature 114.8 °F.

**Notes:**
- Provide tee, adaptors, and flexible copper tubing to suit installation.
- Tempered water to hot side of faucet.

- Faucet Supplies:
  - Chrome finish polished brass.
  - Commercial duty ¼ (one-quarter) turn.

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SK-2 Countertop Mount Sink-Two Handle Faucet

- Single bowl rectangular countertop mount sink:
  - 2-hole.
  - 4" centerset.
  - 14-5/16" high x 16-5/8" wide x 7" deep.
  - Back ledge.
- Type 316, 20-gauge stainless-steel, satin finish rim and bowl, mounting kit, fully undercoated to reduce condensation and resonance, factory applied rim seal.

- Two-handle faucet FC-1:
  - 4" centerset.
  - Brass construction.
  - 2.2GPM maximum flow aerator outlet.
  - Brass swing gooseneck spout.
  - Red and blue indexed wrist blade handles.

- Point of use thermostatic water mixing valve:
  - Bronze body.
  - Temperature adjustment by using a hex wrench.
  - ¼" inlet compression fittings with stainless-steel 20" flexible hose and ½” MNPT outlet connection.
  - Built-in checks.
  - Housed in 5" high x 3¾" wide x 3-3/16" deep enclosure.
  - Valve temperature 114.8°F.

Notes:
- Provide tee, adaptors and flexible copper tubing to suit installation.
- Tempered water to hot side of faucet.

- Faucet Supplies:
  - Chrome finish polished brass.
  - Commercial duty ¼ (one-quarter) turn ball valve, angle stop.
  - ½” I. D. Inlet x 5” horizontal extension tubes, combination V. P.
  - Loose key handle, escutcheon, and flexible copper riser.

SK-3 Hand Washing Sink

- Hand washing sink:
  - 16" high x 19" wide x 5¼" deep.
  - Sink and cabinet constructed of 14-gauge Type 304 stainless-steel with satin finish.
  - Angled front corners.
• Front access panel for easy maintenance access.
• 1½" stainless-steel dome strainer with integral tailpiece and P-trap.
• “Z-Clip” wall hanger for mounting (fasteners by others).

Electronic powered battery faucet FC-2:
• Below deck thermostatic mixing valve.

Supplies:
• Chrome-plated.
• Commercial pattern ¼ (one-quarter)-turn brass ball valve with convertible loose key handle.
• Chrome-plated copper risers and deep brass flange.
• Inlet shall be ½" sweat x 5" long and ¾" compression.

P-trap:
• Chrome-plated.
• Polished cast brass adjustable body.
• 1½" inlet and outlet with cleanout plug.
• Seamless brass wall bend and escutcheon.

UR-1 Wall Hung Urinal - For Flush Valve-Concealed– “No Touch”-Hardwired

Urinal:
• White vitreous china.
• Range of 0.125 U.S. Gal—0 U.S. Gal per flush.
• Wall hung.
• Extended sides for privacy.
• Wash down action.
• Flushing rim ¾" diameter.
• Back spud.
• Elongated rim.
• Integral P-trap.
• Outlet connection 2".
• Two wall hangers.
• Stainless-steel strainer.

Concealed electronic “no-touch” hard wired-plug-in flush valve FV-2:
• Chrome-plated.
• 0.125 U.S. Gal factory set flow.
• Self-cleaning brass piston with integral wiper spring.
• Hydraulic metal push button assembly for mechanical over-ride.
• Infrared sensor.
• Mechanical courtesy manual over-ride flush.
• Vacuum breaker housed in recessed wall box located above urinal.
• Plug-in AC power supply included.
• Plug-in transformer:
  • 100VA-250VA/6VA 3A.
  • 72" long cord with quick connect connector.

Note: Provide electrical duplex box with ground fault interrupter.

• Single carrier:
  • Mounted on concrete floor.
  • Heavy gauge epoxy coated steel offset uprights with welded feet.
  • Universal steel hangar support plate and bottom bearing plate with integral mounting
    brackets.
  • Minimum space required for one unit: 4”.
  • Minimum space required for two–six (2-6) units in a row: 6”.
  • Finished metal stud wall to back of pipe space.

• Wall access cleanout:
  • Cast iron body ferrule.
  • Threaded brass countersunk cleanout plug.
  • Vandal proof stainless-steel screw.
  • Stainless-steel wall access cover.

UR-1A Wall Hung Urinal-For Flush Valve-Concealed-No Touch–Hardwired–ABAAS Compliant

• Same as UR-1 except mounted per ABAAS.

WC-1 Floor Mounted Toilet–For Flush Valve-Concealed-No Touch–Hardwired

• Elongated 16¾” high, high efficiency toilet (HET) Toilet:
  • Vitreous china with antimicrobial surface which inhibits the growth of stain and odor
    causing bacteria mold and mildew.
  • Floor mounted.
  • Siphon jet flush action.
  • Range of 1.1 U.S. Gal — 1.6 U.S. Gal per flush.
  • Condensate channel.
  • 2¼" fully glazed internal trap way, back outlet.
  • Bolt caps.
  • 1½" diameter.
  • Top spud.

• Extra heavy-duty toilet seat:
  • For elongated bowl, open front.
  • Solid polypropylene plastic with antimicrobial surface, less cover.
  • Reinforced stainless-steel check hinges.
  • Post nuts and washers.
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1. Concealed flush valve FV-1:
   - Satin finish.
   - 1.28 U.S. Gal factory set flow.
   - Self-cleaning brass piston with integral wiper spring prevents clogging.
   - Hydraulic metal push button assembly for true mechanical over-ride.
   - Infrared sensor.
   - Mechanical courtesy manual over-ride flush.
   - Exposed CP elbow for top spud connection.
   - Vacuum breaker housed in recessed box located above the toilet (sensor to clear toilet seat cover).

2. Plug-in transformer:
   - 100VA—250VA/6VA, 3A.
   - 72” long cord with quick connect connector.

3. Wall flange:
   - Same material as the connecting pipe drain.
   - All brass bolts.
   - Rubber gasket.

WC-1A Floor Mounted Toilet – For Flush Valve-Concealed · No Touch-Hardwired · ABAAS Compliant

4. Same as WC-1 except mounted per ABAAS.

WCD-1A Combo Toilet/Basin·ABAAS Compliant·Stainless-Steel·Security

5. Angled Basin and Toilet, ABAAS-Compliant, Compact Combination:
   - This fixture is arranged to be installed on a finished wall and serviced from an accessible pipe chase.
   - Fixture is fabricated from 14-gauge, Type 304 stainless-steel of seamless weld construction with a satin finish on the outside—as well as the inside—of the toilet bowl.
   - Cabinet interior is sound-deadened with a fire-resistant material.
   - Optional wall sleeve or metal template is recommended on all installations for required wall openings.
   - Standard oval lavatory bowl is 9¾” high x 13½” wide x 5” deep.
   - Lavatory waste outlet is 1½” outside diameter (OD) plain end.
   - Toilet is blowout jet type with elongated bowl.
   - Toilet waste outlet is 2⅜” O.D. plain end extending 3” beyond the fixture for wall outlet or gasketed waste for floor outlet.
   - Unit is provided with a hydraulically actuated flush valve (shipped loose).
   - Grab bar is heavy gauge Type 304 stainless-steel construction, 1½” diameter x 36” long.
   - Grab bar is positioned behind toilet and is field installed to wall and to side of lavatory cabinet, angled left, on-floor, wall outlet, bubbler, penal, single temperature.
Air-control, metering, hydraulic flush valve, electronic flush valve with piezo pushbutton, flush valve through wall connector, lavatory waste extension should be 3” standard.

Length beyond fixture must be specified.

3” standard toilet waste extension should specify length beyond fixture.

EWC-1A Fountain Cooler-Stainless-Steel Receptor and Cabinet-Wall Mounted-BARRIER-Free Design/ABAAS Compliant.

Wall-mounted, vandal resistant bi-level pressure water cooler with 32” back panel, shall deliver a minimum of 8.0 GPH of water at 50 °F cooled from 80 °F inlet water and 90 °F ambient.

Unit shall be made from 18-gauge, Type 304 stainless-steel with a brushed finish.

Unit shall be activated by self-closing, frontal push pads, by using less than five pounds of force, which activates internally mounted valves with adjustable stream regulators controlling the water flow.

Cooling system shall use R-134a refrigerant and be capillary tube controlled.

An adjustable thermostat with an off position shall control the refrigeration system.

Bubblers shall be polished chrome-plated brass with non-squirt features and operate on water pressure range of 20–105 psi.

Unit shall have two-piece contoured bowls with P-traps integral to the unit.

Unit shall adhere to ANSI A117.1 and Americans with Disabilities Act of 1990 frontal approach and protruding objects requirements, child ABAAS parallel and frontal approach and ANSI/NSF 61, Section 9.

Unit shall be listed by Underwriters Laboratories for both the U.S. and Canada, compliant to the Air Conditioning and Refrigeration Institute Standard 1010.

Fountain Supplies:

- Chrome-plated with loose key heavy all brass straight stops.

P-trap(s):

- 1¼" metal construction.

EEW-1 Emergency Eye/Face Wash-Wall Mounted

Wall mounted eye/face wash, with a stainless-steel shrouded bowl.

ABS plastic eye/face wash spray heads.

ABS yellow plastic eye/face wash heads with integral flip dust covers, internal flow controls and filters to remove debris from the water.

½" National Piper Taper (NPT) chrome-plated brass stay-open ball valve with a stainless-steel push handle and a 50-mesh inline strainer, ½" (13mm) NPT female threaded, chrome-plated brass inlet.

Chrome-plated brass, 1¼" O.D. tailpiece.

Stainless-steel 11¾" diameter bowl with shrouded wrap around skirt.

11-gauge galvanized steel wall bracket with a yellow powder coated finish.

ANSI-compliant, vertical identification sign.

A waterproof test card to record the date and inspector's name for weekly functional testing of the unit.

An anti-microbial agent is molded into the ABS material, providing integrated protection.

● P-trap:
  - Chrome-plated.
  - 17-gauge.
  - Brass adjustable body.
  - 1¼” and escutcheon.

EEW-1 TMV Emergency Eye / Face Wash Tempered Water Mixer (Single Station) (Internal Cold By-Pass) Supply Fixture

● Thermostatic temperature control valve, all brass design, with paraffin-filled motor, check stops, tamper-resistant temperature adjustment control.

● Factory set temperature to 85 °F outlet temperature.

● Dual internal cold-water by-pass to ensure flow in the event of a valve failure or loss of hot water supply, dial thermometer.

● 8 GPM of tempered water with a 30-psi pressure drop across valves and 50% flow on the by-pass.

● ½” connections.

ES-1 Emergency Drench Shower and Eye/Face Wash — Floor Mounted

● Pedestal mounted combination station with an eye/face wash:
  - Stainless-steel, 7¾” diameter showerhead with a 20 GPM flow regulator.
  - Shower Valve 1” NPT rough chrome-plated brass stay-open ball valve.
  - Unit is provided with a stainless-steel actuator arm and a 29” stainless-steel pull rod.
  - Eyewash Bowl Stainless-steel, 11¾” diameter bowl.
  - Spray Head Assembly ABS yellow plastic eyewash heads with integral flip dust covers, internal flow controls and filters to remove debris from the water.
  - An anti-microbial agent is molded into the ABS material, providing integrated protection.
  - Eyewash Valve ½” NPT chrome-plated brass stay-open ball valve that's operated by a stainless-steel push handle and a 50 mesh inline strainer.
  - Water Supply 1¼” NPT female threaded side or top inlet.
  - Waste 1¼” NPT female outlet.
  - Piping & Mounting Schedule 40 galvanized steel piping and a 9¾” diameter cast iron floor flange with a yellow powder coated finish.
  - Universal Sign ANSI compliant, vertical identification sign.
  - Weekly Test Tag A waterproof test card to record the date and inspector's name for weekly functional testing of the unit.

● Floor drain FD-2:
  - Epoxy coated cast iron body, anchor flange, reversible clamping collar with primary and secondary weep holes, 8” nickel bronze adjustable strainer.
  - Located under eyewash and shower with waterproofing flange.
  - P-trap.
ES-1 TMV Emergency Combination Eye/Face Wash and Emergency Drench Shower (Single Station) Tempered Water Mixer (Internal Cold By-Pass)

- Supply fixture:
  - Thermostatic temperature control valve.
  - All brass design, with paraffin filled motor, check stops, tamper-resistant temperature adjustment control.
  - Factory set temperature to 85 °F outlet temperature.
  - Dual internal cold-water by-pass to ensure flow in the event of a valve failure or loss of hot water supply.
  - Dial thermometer.
  - 33GPM of tempered water with a 30-psi pressure drop across valves and 50% of the normal flow on the by-pass.
    - ¾" inlets.
    - 1" outlet.

ES-2 Emergency Drench Shower and Eye/Face Wash-Floor Mounted (Heat Traced)

Heat traced, pedestal mounted combination station with an eye/face wash:

- Yellow, ABS plastic 7¼" diameter showerhead with a 20 GPM flow regulator.
- An antimicrobial agent molded into the ABS material, providing integrated protection.
- 1" IPS rough chrome-plated brass stay-open ball valve.
- Stainless-steel actuator arm and a 29" stainless-steel pull rod.
- ABS yellow plastic eye/face wash heads with integral flip dust covers, internal flow controls and filters to remove debris from the water.
- An anti-microbial agent molded into the ABS material, providing integrated protection.
- ½" IPS chrome-plated brass, stay-open ball valve with a stainless-steel stem and push handle.
- An integrated weep hole to drain residual water from the eye/face wash heads after each use.
- Freeze protection valve:
  - Automatically opening in the event electrical failure causes internal water temperatures to drop below 35 °F.
  - 1¼" NPT female threaded top or bottom inlet.
  - 1" thick removable foam insulation covered by a UV protected ABS plastic jacket.
  - All joints and openings are factory sealed.
  - Schedule 40 internal galvanized steel piping and a 9½" diameter cast iron floor flange.

- Electrical system/heat cable:
  - 120VAC, 60 HZ single phase.
  - Systems junction box and components are rated for Class 1, Division 2, Groups B, C, and D.
  - Self-regulating heat tracing cable is controlled by a thermostat that shuts off the heat when the ambient temperature reaches 55 °F.
  - Cable is both FM- and CSA-approved.
  - ANSI compliant, vertical identification sign.
A waterproof test card to record the date and inspector's name for weekly functional testing of the unit. Meets ANSI Z358.1-2009.

AD-1 Area Drains/Deck Drains

- Area drain:
  - Epoxy coated cast iron body.
  - Flashing clamp with integral gravel stop.
  - 12¾" x 12¾" square promenade top.
  - 4" outlet.
  - No hub.
  - Sump receiver.
  - Vandal proof top.

FD-1 Floor Drains-Finished Area

- Floor drain:
  - Epoxy coated, cast iron body.
  - Anchor flange.
  - Reversible clamping collar with primary and secondary weep holes.
  - Adjustable strainer.
  - 3" outlet.
  - No hub.
  - Vandal proof.
  - Trap primer tapping.
  - 6" diameter.
  - Polished nickel bronze strainer.

FD-2 Floor Drains-Floor Drain with Stainless-steel Strainers — Finished Area

- Floor Drain:
  - Epoxy coated cast iron body.
  - Anchor flange.
  - Reversible clamping collar with primary and secondary weep holes.
  - 4" outlet.
  - With optional no hub.
  - 4" round cast iron funnel.
  - Vandal proof.
  - Trap primer tapping.
  - 8" diameter.
  - Adjustable round stainless-steel strainer.
RPZBFB  Reduced Pressure Zone Backflow Preventer Assembly

- Backflow preventer, reduced pressure zone assembly:
  - Lead-free construction.
  - 3" FDA epoxy coated cast iron lead-free body and yoke resilient seated gate valves.
  - UL/FM outside stem and yoke resilient seated gate valves.
  - FDA epoxy coated strainer.
  - 2" outlet air gap fitting (piped to nearest floor drain) shall be installed at each cross-
    connection to prevent back siphonage and backpressure of hazardous materials into the
    potable water supply.
  - The assembly shall consist of a pressure differential relief valve located in a zone between
    two (2) positive seating check valves.
  - Back siphonage protection shall include provision to admit air directly into the reduced
    pressure zone via a separate channel from the water discharge channel, or directly into the
    supply pipe via a separate vent.
  - The assembly shall include two tightly closing shutoff valves before and after the assembly,
    test cocks and a protective strainer upstream of the No. 1 shutoff valve.
  - The assembly shall meet the requirements of ASSE Standard 1013.
  - AWWA Standard C511-92 CSA B64.4; FCCCHR of USC Manual Section 10.
  - Listed by IAPMO (UPC).
  - SBCCI (standard plumbing code).

- Temperature Range:
  - 33 °F—140 °F continuous.
  - 180 °F intermittent, maximum

- Working Pressure:
  - 175 psi.
  - Degree of hazard present, vertical orientation, frequency of testing, or other installation
    requirements at discretion of local authority.

JS-1  Service/Mop Sink—Two Handle Faucet

- Rectangular service/mop sink:
  - 18" high x 22" wide x 20¼” deep.
  - Faucet on backsplash.
  - Enameled cast iron construction porcelain finish.
  - 9" high drilled block two (2) holes on 13/16" backsplash.
  - Stainless-steel rim guard.
  - Wall hanger.

- Wall-mounted, two handle faucet:
  - 8" centerset.
  - Brass construction.
  - Integral stops.
  - 3-7/16" spout with atmospheric vacuum breaker and bucket hook, lever handle.
1. Rim Guard.

2. HB-1 Hose and Supply Boxes
   - Hose valve bend nose stainless-steel lead free with vacuum breaker:
     - Cartridge-operated hose valve with lock shield bonnet and removable key handle.
     - Interior wall hose valves of polished chrome finish, chrome-plated rough.
     - Freeze-proof valve.

3. HB-2 Hose and Supply Boxes
   - Recessed hose box with door and frame hot and cold with vacuum breaker:
     - Box shall be one-piece cast construction, with plain finish.
     - Frame and door shall have a prime coat finish.
     - Door shall have a recessed cam lock operable with the removable key wheel handle on the valve.
     - Valve shall be a replaceable cartridge type with vandal-resistant lock shield bonnet, removable loose key wheel handle and screwdriver operated stop, stainless-steel lead free.
     - Freeze-proof valves required.

4. DSP-1 Disposer
   - Garbage disposer:
     - Meet ASSE 1008 and UL 430 standards, and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
     - Provide reset button, wall switch.
     - Use corrosion-resistant chamber with jam-resistant, cutlery or stainless-steel grinder or shredder.
     - Drain outlet shall match disposer model.
     - Install quick-mounting, stainless-steel sink flange, anti-splash guard, and combination cover/stopper.
     - Provide sound-insulated chamber and stainless-steel outer shell.

5. Motor:
   - 115 VAC.
   - 1725 RPM.
   - Minimum 3 HP with overload protection.

6. DSP-2 Disposer
   - Garbage disposer:
     - Meet ASSE 1008 and UL 430 standards, and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
     - Provide reset button, wall switch.
     - Use corrosion-resistant chamber with jam-resistant, cutlery or stainless-steel grinder or shredder.
     - Provide 1½” outlet.
1. Install quick-mounting, stainless-steel sink flange.
2. Provide Anti-splash guard.
3. Provide combination cover/stopper.
4. Provide sound-insulated chamber and stainless-steel outer shell.

5. Motor:
   6. 115 VAC.
   7. 1725 RPM.
   8. ¾ HP with overload protection.

9. DSP-3 Disposer–Canine Food Prep Sink

   - Garbage disposer:
     10. Meet ASSE 1008 and UL 430 standards, listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
     11. Provide reset button.
     12. Install wall switch.
     13. Use corrosion-resistant chamber with jam-resistant.
     14. Provide cutlery- or stainless-steel grinder or shredder.
     15. Install 1½" outlet.
     16. Use quick-mounting, stainless-steel sink flange.
     17. Install anti-splash guard.
     18. Provide combination cover/stopper.
     19. Provide sound-insulated chamber and stainless-steel outer shell.

   - Motor:
     20. 115 VAC.
     21. 1725 RPM.
     22. 3 HP with overload protection.
MECHANICAL
REQUIREMENTS

Cargo Facilities Design Standard
2019 (Draft)

U.S. Customs and
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CHAPTER 18 - MECHANICAL

18.1 INTRODUCTION

This chapter provides information on the infrastructure requirements for mechanical systems, including general design criteria, codes, energy efficiency, systems, controls, commissioning, and products at U.S. Customs and Border Protection (CBP) cargo facilities. Because of the wide variety of facility requirements and applicable mechanical systems, this chapter only covers general mechanical requirements.

18.2 CODES AND REGULATIONS

All portions of the mechanical design shall comply with the latest approved editions of the following codes and applicable local standards and regulations:

- International Mechanical Code (IMC).
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standards.
- National Fire Protection Association (NFPA) Standards.
- Unified Facilities Criteria (UFC) 4-022-03 (Security Engineering: Design of Security Fencing, Gates, Barriers and Guard Facilities).
- Unified Facilities Criteria (UFC) 4-022-03 (Security Engineering: Entry Control Facilities/Access Control points).
- Unified Facilities Criteria (UFC) 3-400-01: Design-Energy Conservation.
- International Fuel Gas Code (IFGC).
- American Society of Mechanical Engineers (ASME).

18.3 DESIGN CRITERIA

18.3.1 General Parameters

Compliance with the latest versions of ASHRAE Standard 90.1 and ASHRAE Standard 62 is required. Outside air requirement for each space shall be based on the latest edition of the IMC and ASHRAE documents.

18.3.2 Outdoor Design Criteria

Outdoor air design criteria shall be based on the weather data tabulated in the latest edition of the ASHRAE Handbook of Fundamentals Volume. Winter design conditions shall be based on the 99.6% column dry bulb (DB) temperature. Summer design for sensible heat load calculations shall be based on the 0.4% DB temperature with its mean coincident wet bulb temperature. Design conditions for the summer ventilation load and all dehumidification load calculations shall be based on the 0.4% dew point with its mean coincident DB temperature.

18.3.3 Indoor Design Criteria

Indoor design temperatures and relative humidity (RH) requirements are stated in Table 18.3-1, copied from General Services Administration (GSA) PBS P-100. The following spaces shall be kept under negative
pressure relative to the surrounding building areas: toilets, showers, locker rooms, custodial spaces, laboratories, and other spaces as required. The air from these spaces shall be exhausted directly outdoors.

### Table 18-1. Indoor Design Conditions from the GSA PBS P-100

<table>
<thead>
<tr>
<th>Type of Area</th>
<th>Summer DB 1,3</th>
<th>RH 2,3,4</th>
<th>Winter DB 1,3</th>
<th>RH 2,3,4</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Office 13</td>
<td>24 (75)</td>
<td></td>
<td>22 (72)</td>
<td></td>
</tr>
<tr>
<td>Automatic data processing (ADP), computer and information technology equipment rooms</td>
<td>22 (72)</td>
<td>45</td>
<td>22 (72)</td>
<td>30</td>
</tr>
<tr>
<td>Corridors 13</td>
<td>24 (75)</td>
<td></td>
<td>22 (72)</td>
<td></td>
</tr>
<tr>
<td>Building lobbies and atriums 10,13</td>
<td>24 (75)</td>
<td></td>
<td>22 (72)</td>
<td></td>
</tr>
<tr>
<td>Toilets 13</td>
<td>24 (75)</td>
<td></td>
<td>22 (72)</td>
<td></td>
</tr>
<tr>
<td>Locker rooms</td>
<td>26 (78)</td>
<td></td>
<td>21 (70)</td>
<td></td>
</tr>
<tr>
<td>Electrical closets</td>
<td>26 (78)</td>
<td></td>
<td>13 (55)</td>
<td></td>
</tr>
<tr>
<td>Mechanical spaces 13</td>
<td>35 (95)</td>
<td></td>
<td>13 (55)</td>
<td></td>
</tr>
<tr>
<td>Electrical switchgear 13</td>
<td>35 (95)</td>
<td></td>
<td>13 (55)</td>
<td></td>
</tr>
<tr>
<td>Elevator machine room 10</td>
<td>26 (78)</td>
<td></td>
<td>13 (55)</td>
<td></td>
</tr>
<tr>
<td>Emergency generator room</td>
<td>40 (104)</td>
<td></td>
<td>18 (65)</td>
<td></td>
</tr>
<tr>
<td>Transformer vaults 13</td>
<td>40 (104)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stairwells</td>
<td>(none)</td>
<td></td>
<td>18 (65)</td>
<td></td>
</tr>
<tr>
<td>Communications/telecommunications frame room 7</td>
<td>24 (75)</td>
<td>45</td>
<td>22 (72)</td>
<td>3012</td>
</tr>
<tr>
<td>Storage room</td>
<td>30 (85)</td>
<td></td>
<td>18 (65)</td>
<td></td>
</tr>
<tr>
<td>Conference room 11,13</td>
<td>24 (75)</td>
<td></td>
<td>22 (72)</td>
<td></td>
</tr>
</tbody>
</table>

### Table 18-1. Notes

1. Dry bulb (DB) temperatures are degrees Celsius (Fahrenheit), to be maintained at +/-1°C (+/-2°F) of setpoint.
2. Unless specifically noted, minimum permissible relative humidity in conditioned areas is 30% and maximum permissible relative humidity is 60%.
3. Dry bulb and relative humidity are to be maintained at 150 mm (6 in.) to 1,800 mm (6 ft.) above the floor.
4. Relative humidity should be maintained within +/- 5 percent RH of setpoint in spaces.
5. Maximum temperature. The space is to be mechanically cooled if necessary.
6. Room shall not exceed temperature with generator running.
7. Shall comply with Electronic Industry Alliance/Telecommunications Industry Alliance (EIA/TIA) Standard 569.
8. Minimum DB temperature in the building shall be 13°C (55°F), even when unoccupied.
9. The A/E to confirm ADP equipment manufacturer’s requirements as more stringent. Provide in-room display and monitor device (such as wall-mounted temperature and humidity chart recorder).
10. System shall be designed for process cooling. Cooling system shall be a dedicated independent system.
11. Provide independent temperature control.
12. Minimum relative humidity requirements may be omitted in moderate southern climate zones, upon the approval of local GSA representatives.
13. The values shown are for DB temperatures in occupied spaces, when the air speed is less than 0.2 m/s (40 ft/min) and when the net thermal radiant exchange between the occupants and surrounding surfaces is negligible. Otherwise, the values shown are for operative temperature as defined in ASHRAE Standard 55.
18.4 ENERGY EFFICIENCY AND SUSTAINABILITY (FOR REFERENCE)

For CBP space provided by cargo facility operators the following strategies are recommended but NOT required.

18.4.1 Solar Thermal and Geothermal

In areas where applicable as a result of the energy and economic analysis, the design shall evaluate all available on-site renewable energy options, such as passive solar heating; wind, photovoltaic, and geothermal heating; and groundwater cooling.

18.4.2 Natural Ventilation

In areas where applicable as a result of the energy and economic analysis, the design shall incorporate natural ventilation of the buildings in accordance with the requirements of the latest edition of the IMC.

18.5 SYSTEMS AND MATERIALS

The system to be selected shall be coordinated with the results of the energy and economic analysis performed for the site and the block load calculations performed on each building.

18.5.1 HVAC Systems

A. General (All Building Types)

- Chilled beam systems — Not permitted in CBP facilities.
- Computer rooms – Provide separate precision type air-conditioning system that can supply 24/7 cooling.
- Telephone rooms – Provide 24/7 cooling.
- Utility rooms – Provide ventilation with a minimum of four (4) air changes per hour.
- CBP work area and public areas — Provide separate systems.
- Elevator machine rooms – Provide separate air-conditioning systems for elevator machine rooms, due to the latest electronic controls of modern elevators. If air-conditioning is not required, provide proper ventilation as required by the elevator equipment manufacturer.

B. Agriculture Laboratory Fume Hood

- Hood size. OSHA 29 CFR-1910 recommends laboratories provide an average of 2.5 linear feet of hood space per person. Laboratory hood size is commonly expressed by the outside width; typical ag labs have fume hood with 4 ft. hood width. The actual working space is approximately 5” to 12” less than the expressed exterior width of the hood.
- Liner material. The liner material selected should be durable and resist chemicals, heat and open flame. Typical ag fume hood has molded fiberglass reinforced polyester or fiberglass reinforced composite panel liner.
- Sashes. Sashes provide some physical protection from splashes and reactions and are transparent to allow viewing. Typical ag fume hood has vertical rising sashes to allow large apparatus or chemical bottles to be loaded in the hood.
● **Lighting.** Light fixtures in an agriculture laboratory fume hood typically come in vapor-proof style. Vapor-proof light fixtures are usually fluorescent, installed outside the hood liner, and protected from the hood interior by a transparent, impact-resistant glass shield.

● **Service fixtures.** Utility services may include connections to gases, air, water, and vacuum. If service fixtures are required, they should be installed to allow the connection of service supply lines either on the hood itself or the work surface supporting the hood. The plumbing tubing and valves should be corrosion resistant, if located inside the hood, and should be of the proper material to satisfy local code requirements.

● **Electrical receptacles.** If electrical receptacles are required, they should be located on the hood exterior, away from the corrosive effects of the fumes inside the hood structure. Provisions should be made so that all electrical wiring is isolated and physically separated from vapors handled within the hood.

● **Americans with Disabilities Act (ADA) Requirements.** Fume hoods and accessories must be available with features that meet the requirements of the ADA. Switches, controls, and written instructions should be located where they can be seen and reached by a seated person. The ADA Standards for Accessible Design specifies that forward reach should be a maximum of 48 inches high and side reach a maximum of 54 inches high. To allow a person in a wheelchair to work comfortably, the ADA also specifies that work surface height should be from 28 to 34 inches above the floor and knee clearance underneath should be at least 27” high, 30” wide, and 19” deep. Audible alarms must have an intensity and frequency that can attract the attention of individuals who have partial hearing loss. The ADA standard states that audible emergency alarms shall produce a sound that exceeds the prevailing equivalent sound level in the room or space by at least 15 dB or exceeds any maximum sound level with a duration of 60 seconds by 5 dB, whichever is louder.

● **Ventilation system components and accessories.** The laboratory hood is just one component of a complete fume ventilation system. At the same time a hood is selected, a blower, ductwork, base cabinet, and work surface must also be selected. Air supply must be determined as well.

● **Remote blowers.** Of all the additional components needed, the blower is the most crucial to the performance of the hood. By creating suction within the ductwork, blowers draw air from the laboratory room, through the hood, and out the duct system. Fume hood installations utilizing remote blowers are the most common type. Centrifugal type blowers are popular because they are more efficient and less noisy than others. The exhaust blower is often positioned in a penthouse or on the building’s exterior, usually on the roof, where noise is less noticeable.

● **Blower sizing.** To provide the optimum face velocity and air volume for the laboratory hood, the blower must be sized properly. Although horsepower and revolutions per minute (RPM) are important blower specifications, blower selection should be based on the air volume the hood will exhaust and the total static pressure loss of the entire system.

● **Air volume.** The air volume (or volumetric rate) passing through the hood is generally equal to the area of the sash opening multiplied by the average velocity desired. For example, if 100 feet per minute (fpm) is required and the hood has a sash opening of 7.5 square feet, then the hood’s air volume is 750 (7.5 x 100) cubic feet per minute (CFM).

● **Ductwork.** Ductwork includes fume pipe, male and female couplings, elbows, reducers, and exhaust discharge stacks (weathercaps). Round diameter duct made of rigid materials offers the least static resistance. Like the liner material of a laboratory hood, duct material must be resistant to the fumes exhausted through it. Ductwork made of unplasticized polyvinyl chloride (PVC) is a popular choice.
because it is rigid, highly resistant to both acid and solvent vapors, and, because it is extruded, comes in round diameters.

- Base cabinets. Agriculture laboratory hoods are designed to rest on a bench-high base stand or cabinet with a work surface. Base cabinet is used to store alcohol, bleach, and other solvents.

C. Other

- Canine facilities. See general requirements on selecting and sizing the system. Do not recirculate the return air.
- Detention. See general requirements on selecting and sizing the system.
- Laboratory. See general requirements on selecting and sizing the system. Do not recirculate the return air. Provide exhaust hoods where chemicals are mixed or used.

18.6 COMMISSIONING

The National Conference on Building Commissioning has established an official definition of ‘Total Building Commissioning’ as follows:

“The systematic process of assuring by verification and documentation, from the design phase to a minimum of one year after construction, that all facility systems perform interactively in accordance with the design documentation and intent, and in accordance with the owner’s operational needs, including preparation of operation personnel”.

All CBP projects shall use The Total Building Commissioning Process. The Total Building Commissioning Process shall be performed by an independent third-party commissioning authority under direct contract to the owner with ACG AABC (CxA) certification, Association of Energy Engineers (AEE) (CBCP) certification, ASHRAE (CPMP) certification, or other industry-wide accepted equivalent certification. The Commissioning Authority shall have familiarity with the CBP Guiding Principles.

The commissioning authority shall utilize the most recent commissioning process outlined in the GSA’s Building Commissioning Guide, which describes the building commissioning philosophy, outlines the building commissioning process from the planning stage through post-construction, and provides a sample scope of work the commissioning of facilities.

18.7 PRODUCTS

18.7.1 Grilles, Diffusers, Registers, and Controls

The following sections list definitions of the various types of grilles diffusers and controls anticipated to be installed in cargo facilities. Each product has been assigned a reference number, a short descriptive name, and a full description of the required features. These definitions are tied to the short descriptive name found in Chapter 22, Room Data Sheets.

S-1 Perforated Plate Diffuser

- Perforated square ceiling supply air diffuser shall be provided with steel or aluminum flush face with adjustable four-way air pattern controls. Diffuser shall have a perforated face with 3/16-inch diameter holes on ¼-inch staggered centers and no less than 50% free area. The back pan shall be one-piece
stamped heavy gauge steel with 1-1/8-inch neck depth for supply air duct connection. Diffuser frame shall be a mounting type required to match ceiling type. Pattern controllers in the supply models shall be mounted on the back of the perforated face and shall be field adjustable. The perforated face shall be easily unlatchable from the backpan to facilitate adjustment of the face pattern controller. Diffuser shall be white finish with a baked enamel paint. Perforated face size shall be as indicated on schedules.

- The manufacturer shall provide published airflow and sound performance data tested in accordance with ANSI/ASHRAE Standard 70.

S-2 Square Ceiling Diffuser

- Square ceiling diffuser shall be steel or aluminum with three cones, which give a uniform face size and appearance when different neck sizes are used. All cones shall be one-piece precision die-stamped with no mitered corners. The two inner cones shall be constructed as a single, removable inner cone assembly for easy installation and cleaning. The inner cone assembly shall have a hole with removable plug in the center to allow quick adjustment of an optional inlet damper without removing the inner core assembly. The finish shall be white baked on enamel. Diffuser frame type shall be mounting type required to match ceiling type.

- The manufacturer shall provide published airflow and sound performance data for the square diffuser tested in accordance with ANSI/ASHRAE Standard 70.

S-3 Supply Grille

- Supply grilles shall be steel, or aluminum double deflection or single deflection of the sizes and mounting types shown on the plans and outlet schedule. The deflection blades shall be available parallel to the long or short dimension of the grille. Construction shall be of steel with a 1-1/4" wide border on all sides. Screw holes shall be countersunk for a neat appearance. Corners on steel units shall be welded with full penetration resistance welds. Corners on aluminum units shall be interlocked at frame and mechanically staked to form a rigid frame.

- Deflection blades shall be contoured to a specifically designed and tested cross-section to meet published test performance data. Blades shall be spaced on 3/4” centers. Blades shall have friction pivots on both ends to allow individual blade adjustment without loosening or rattling. Plastic blade pivots are not acceptable. The grille finish shall be white baked enamel.

- The manufacturer shall provide published airflow and sound performance data for the grille. The grille shall be tested in accordance with ANSI/ASHRAE Standard 70.

S-4 Linear Slot Ceiling Diffuser

- Linear diffusers shall provide supply air with ½-, ¾-, 1-, and 1-1/2- inch slot spacing of the sizes and mounting types shown on the plans and outlet schedule. Linear slot diffusers shall be available in standard one-piece lengths up to 6 feet and 1 to 8 discharge slots. Diffuser lengths greater than 6 feet shall be furnished in multiple sections and will be joined together end-to-end with alignment pins to form a continuous slot appearance.
- All alignment components shall be provided by the manufacturer. The frame and support bars shall be constructed of heavy gauge extruded aluminum. The pattern controller shall be an aerodynamically curved shaped steel deflector capable of 180-degree pattern adjustment from the face of the diffuser and shall allow dampering, if required. Maximum pattern controller length shall be furnished in multiple sections.
- The finish shall be white on the face and black on the pattern controllers. Heavy gauge extruded aluminum end borders, end caps and mitered corner components manufactured by the diffuser manufacturer shall be available to close off the ends of the diffusers. Diffuser air plenums shall be manufactured by the same manufacturer as the linear slot diffusers.
- The manufacturer shall provide published airflow and sound performance data for the linear slot diffuser. The diffuser shall be tested in accordance with ANSI/ASHRAE Standard 70.

S-5 Security Grille

- Security grilles of sizes and mounting types are shown on the plans and outlet schedule. Grilles shall have a 3/16-inch thick steel face with 5/16-inch diameter holes on 7/16-inch staggered centers. The sleeve shall be 3/16-inch thick and shall be stitch welded to the face and along the entire length of all sleeve seams. Grille to include 1-1/2 x 1-1/2 x 3/16-inch steel angle mill finished iron frame shipped loose for field welding to grille sleeve at back of wall penetration.
- The grille finish shall be white. The manufacturer shall provide published airflow and sound performance data for the grille. The grille shall be tested in accordance with ANSI/ASHRAE Standard 70.

S-6 Security Diffuser

- The supply diffuser shall consist of an outer frame assembly of the sizes and mounting types shown on the plans and outlet schedule. A square inlet shall be integral part of the frame assembly and a transition piece shall be available to facilitate attachment of round duct. An inner core assembly consisting of fixed deflection louvers shall be available in 1-, 2-, 3-, or 4-way horizontal discharge patterns. The inner core assembly shall be removable in field without tools for easy installation, cleaning, or damper adjustment. All units shall be constructed of heavy gauge steel. All units shall be covered with a 12-gauge steel face with 13/16-inch square holes on 1-inch centers. All units will be provided with screw holes in the face for surface mounting. Tamper proof screws to be provided according to structural requirements.
- The grille finish shall be white. The manufacturer shall provide published airflow and sound performance data for the grille. The grille shall be tested in accordance with ANSI/ASHRAE Standard 70.

RR-1 Perforated Return Air Grille

- Perforated square return air ceiling grille shall be flush face steel or aluminum similar in appearance to the perforated supply air diffuser. The return models shall have the same face and border construction as the supply models. Grille shall have a perforated face with 3/16-inch diameter holes on ¼ inch staggered centers and no less than 50 percent free area. The back pan shall be one-piece stamped heavy gauge steel with 1-1/8-inch neck depth. Return air grilles to be sized for maximum NC 30 in offices and NC 35 in other areas. Grille frame shall be mounting type required to match ceiling
type. The perforated face shall be easily unlatchable from the backpan. Diffuser shall have a white finish with baked enamel paint. Perforated face size shall be as indicated on schedules.

- The manufacturer shall provide published airflow and sound performance data tested in accordance with ANSI/ASHRAE Standard 70.

**RR-2 Return Grille**

- Return grilles shall be single deflection steel or aluminum of the sizes and mounting types shown on the plans and outlet schedule. The deflection blades shall be available parallel to the long or short dimension of the grille. Construction shall be of steel with a 1-1/4” wide border on all sides. Screw holes shall be countersunk for a neat appearance. Corners shall be welded with full penetration resistance welds.
- Deflection blades shall be contoured to a specifically designed and tested cross-section to meet published test performance data. Blades shall be firmly held in place by mullions from behind the grille and fixed in place by crimping or welding. Blades shall be spaced on ¾-inch centers. Blade deflection angles shall be available at 00 or 350.
- The grille finish shall be white baked enamel.
- The manufacturer shall provide published airflow and sound performance data for the grille. The grille shall be tested in accordance with ANSI/ASHRAE Standard 70.

**RR-3 Security Return Grille**

- Security grille of sizes and mounting type shall be as shown on the plans and outlet schedule. Grilles shall have a 3/16-inch thick steel face with 5/16-inch diameter holes on 7/16-inch staggered centers. The sleeve shall be 3/16-inch thick and shall be stitch welded to the face and along the entire length of all sleeve seams. Grille to include 1-1/2 x 1-1/2 x 3/16-inch steel angle mill finished iron frame shipped loose for field welding to grille sleeve at back of wall penetration.
- The grille finish shall be white. The manufacturer shall provide published airflow and sound performance data for the grille. The grille shall be tested in accordance with ANSI/ASHRAE Standard 70.

**RR-4 Security Exhaust Grille**

- Exhaust grille, 12-gauge steel lattice face with 13/16-inch square holes on 1-inch centers. Lattice face shall be white baked on enamel. Units shall be mounted to exhaust the duct flange and ceiling using tamper proof security screws to meet structural requirements. Grill face shall be white baked enamel.

**18.7.2 Controls**

- **Dedicated Room Temperature control**
  - Building room/spaces that are specifically required shall have a dedicated individual room temperature control.
Zone Temperature Control

Building rooms/spaces that are not specifically required to be provided with a dedicated individual room temperature control as indicated on the room data sheet may be included as part of a zone temperature control. A zone temperature control is defined as providing a single thermostatic control to serve a zone of two or more rooms/spaces with similar temperature requirements. Guidelines for combining room/spaces onto a single zone temperature control are as follows:

- Interior temperature control zones for an open office area not to exceed 1500 square feet per zone.
- Temperature control zone for not more than three interior closed offices/spaces or perimeter offices/spaces with similar exposure and similar load profile characteristics.
- Each corner office to have a dedicated individual room temperature control.
- Perimeter thermostatic control zones not to exceed 300 square feet or one column bay width and shall be no more than 15 feet from an outdoor wall along column exposure.

T-1 Flush Mounted Wall Temperature Sensor:

- Provide T-1 sensors in rooms specifically indicated on data sheets. The flush mounted temperature sensor is a device that measures air temperature, via a temperature sensing element, thermally bonded to a metal electrical box cover. The sensor’s resistance varies with the actual room temperature being measured. It incorporates a temperature-sensing element — 10K Ohm Type II thermistor, 100K Ohm thermistor, or 1000 Ohm resistance temperature detector (RTD) — behind a blank, stainless-steel switch cover plate. The sensor is designed for those applications in which a protruding room temperature sensor is not acceptable. A temperature sensor shall be mounted to a 2” x 4” electrical box with tamper proof screws.
CHAPTER 19 - ELECTRICAL-POWER, LIGHTING, AND GROUNDING

19.1 INTRODUCTION

This chapter provides information on the infrastructure requirements for electrical systems, including power distribution, lighting, grounding, and lightning protection for U.S. Customs and Border Protection (CBP) cargo facilities. All portions of the electrical design shall comply with the latest approved editions of the following codes and applicable local standards and regulations:

- National Fire Protection Association (NFPA) 70 - National Electrical Code (NEC).
- NFPA 70E - Standard for Electrical Safety in the Workplace.
- National Electrical Manufacturers Association (NEMA).
- International Building Code (IBC).
- Institute of Electrical and Electronics Engineers (IEEE).
- Illuminating Engineering Society (IES).
- NFPA 780 - Standard for the Installation of Lightning Protection Systems.
- Underwriters Laboratory (UL).

19.2 ELECTRICAL DISTRIBUTION

This section provides recommended guidelines for electrical distribution. The designed electrical system should have sufficient capacity to supply power for the full design load, as well as 50% expansion of the facility. The reliability of local power sources and available emergency generator should be considered in the design of the electrical system. The emergency power system should be capable of providing 100% back-up power for the entire facility and 50% future loads during power outage situations.

All main switchgear should have 25% spare ampacity and 25% space circuit capacity for future considerations. All distribution panels should have 35% spare ampacity and 25% space circuit capacity. All branch circuit panel boards should have 50% spare ampacity and 25% space circuit capacity, while panelboards serving lighting only should have 25% spare ampacity and 25% space circuit capacity.

The electrical distribution system should be comprised of two separate and distinct sub-systems to include essential power and critical power. Depending on the size of the facility and/or other design considerations, the electrical distribution system may include one or both sub-systems. Value engineering should be used to recommend efficient configuration of all electrical distribution system.

19.2.1 Essential Power Distribution System

Essential power to the facility shall be provided via commercial utility power with an engine-generator (E/G) backup and automatic transfer switch (ATS) feeding the essential main distribution panel (MDP). In the event of a commercial utility outage, the E/G start-up is automatically initiated and the ATS should switch from commercial utility to the E/G. If the cargo facility has an E/G that can support CBP operational requirements as defined in this chapter for backup power and spare capacity, then a separate E/G should not be required.
19.2.2 Critical Power Distribution System

Critical power to the facility shall be provided with an uninterruptible power supply (UPS) system with the battery load fed (in charging mode) from the essential MDP. In the event of a commercial utility outage, E/G start-up is automatically initiated and the ATS switches from commercial utility to E/G. During the E/G startup period, and until the E/G is fully on line (within 15 seconds), the UPS ensures that power is supplied to the critical MDP. If the E/G does not fully engage, the UPS should continue to supply the critical loads for up to 90 minutes, allowing time for the problem to be corrected or the system to be shut-down in an orderly manner. The critical loads include all security controls, heating, ventilation, and air-conditioning (HVAC) controls supporting critical areas, emergency lighting, fire alarm and detection panels, and other mission critical systems.

The UPS sizing shall be based on the full capacity of the critical equipment loads, including estimated loads for planned future expansion. A dedicated UPS shall be provided for the local area network (LAN) and supplemental local area network (SLAN) rooms. The UPS shall be mounted on a rack (roughly 2' high x 2' wide x 3' deep).

Systems typically on critical power include the following:

- CBP designated computer systems (including servers and workstations).
- Telephone and communications systems (including routers and switches).
- Security system controls.
- The LAN room equipment.
- The SLAN room equipment.
- Passenger processing and lighting.
- Detention controls.
- Closed circuit television (CCTV) cameras.
- Command and Control Center (CCC) power and lighting.
- Site lighting.
- Dispatch equipment.
- Temporary vault systems.
- Fire pump.
- Fire alarm.
- Egress signs.
- Emergency lighting.

19.2.3 Service Disconnect Means

The secondary side of the service transformer should terminate, in accordance with the NEC, in a separately mounted circuit breaker. The service disconnect is also permitted to be a separately mounted fusible safety switch or a fusible panel board with a main fusible switch.

19.2.4 Ground Fault Interruption Protection

Ground fault interruption protection shall be provided in accordance with the NEC, and additionally, provide single-phase voltage loss protection where required by local codes. Ground fault interruption protection on the MDP should include a main circuit breaker with ground fault interruption protection.
19.2.5 Site Power Distribution

Power to outward buildings or structures shall be via underground duct banks to local power panels or load centers. Manholes or handholes shall be used for any duct bank exceeding 300 feet. Manhole and handhole covers shall be commercial traffic rated with secure locking mechanisms.

19.2.6 Duct banks

Duct banks may be either direct buried and/or red-colored concrete encased, with warning tape, depending on the routing. Duct banks crossing roadways or driveways shall be concrete encased while duct banks crossing unpaved areas may be direct buried polyvinyl chloride (PVC)-coated intermediate metallic conduit or rigid galvanized steel. Duct bank burial depths shall comply with the NEC Table 300.5. All duct banks shall be provided with 50% spare ducts for future requirements. Each type of power/data/communication/security supply shall have one, 2” minimum, conduit. The use of an inner-duct type system shall be considered for low voltage and communications circuits.

19.2.7 Wiring

All wiring should be copper and installed in conduits. All conduits and fittings should be full compression steel fittings.

19.3 EMERGENCY POWER SYSTEM

Emergency power should be provided by a packaged E/G set consisting of a central E/G, ATS, load bank, day tank, and fuel storage tank and associated accessories, distribution panels, dry-type transformers, and branch circuit panels, as required. CBP provides the following recommendations for an emergency power system to accommodate a certain level of processing and security during a power outage.

19.3.1 Engine Generators

The E/G set should be comprised of an engine and a generator section. It has a control panel with a minimum of two output circuit breakers. The E/G should be sized to carry 100% of the facility demand load, plus 50% spare and growth capacity. Demand load is the total power required by the facility taking into consideration all the loads that will be operating simultaneously. The E/G system equipment should be suitable for the maximum available fault current at its terminals. When sizing the E/G, a power factor of 0.8 demand factor should be used for electronic and mechanical loads. Radiators should be unit-mounted, if possible. If ventilation is restricted in indoor applications, remote installation is acceptable. Heat recovery and load shedding should not be considered. Remote location of radiators should be designed to avoid excess pressure on the piping seals.

If the unit is to be installed outdoors, it should be provided with a suitable walk-in acoustic enclosure and jacket water heaters to ensure reliable starting in cold weather. When installed at high altitudes or in areas with very high ambient temperatures, the unit should be de-rated in accordance with manufacturers’ recommendations. Critical silencers are required for all generators and acoustical treatment of interior located generator rooms should be provided as required. Telecommunication modules should be provided to connect generator operation to building automation system.
The generator manufacturer should consider the following operational factors when specifying a generator for a particular site:

- Load management—control of loads.
- Load profiles—duration and types of loads.
- Power factor of loads.
- Generator fuel type (diesel, liquid propane, natural gas).

CBP prefers the use of multiple small generators in lieu of one large generator. Multiple generators may be located at central plant to feed several buildings.

### 19.3.2 Automatic Transfer Switch

The ATS should be identified for emergency use and approved by the authority having jurisdiction (AHJ). The ATS should be microprocessor based, open transition, electrically operated and mechanically held with load bank testing provisions. The ATS should include a bypass isolation switch that allows manual bypass of the normal or emergency source to insure continued power to emergency circuits in the event of a switch failure or required maintenance/testing.

The ATSs serving motor loads should have in-phase monitor (transfer when normal and emergency voltages are in phase) to reduce possible motor damage caused by out-of-phase transfer. They should also have pre-transfer contacts to signal time delay returns in the emergency motor control centers.

### 19.3.3 Day Tank

Day tanks shall be sized for a minimum capacity of four hours of generator operation.

### 19.3.4 Fuel Storage Tank

If fuel storage tank(s) (FST) are provided to CBP, then the FSTs shall be the underground type, suitable for diesel fuel (or propane if appropriate) and shall be double-walled with a concrete encasement. Extended fuel storage capacity shall be considered where generators are utilized for primary power or at locations that could experience catastrophic weather events.

If multiple generators are installed in specific projects, then fuel tanks for multiple generators shall be located at central location of generators.

### 19.3.5 Load Bank

Permanently installed load bank sized at 50% of generator rating should be provided. Load bank should be either factory mounted to the generator (preferred) or pad mounted. Load banks should be provided to test and exercise standby generators to verify overall reliability and ability to run at its rated kVA output without disrupting connected load.
19.4 UNINTERRUPTIBLE POWER SUPPLY

A UPS shall be provided for CBP operations. The UPS system shall be sized to support the initial power load of CBP designated “critical” system loads, plus 25% spare and growth capacity. The UPS system shall include a minimum one-hour battery backup at 50% load. The UPS system shall consist of the following major components:

- Rectifier/charger.
- Inverter.
- Input and output transformers.
- Static bypass switch.
- Input and output circuit breakers.
- External maintenance bypass circuit breakers.
- Battery cabinets or racks.
- Batteries.

The UPS systems 50 KVA and smaller (UPS modules and sealed cabinet batteries) may be collocated in the equipment room being served. The UPS systems larger than 50 KVA shall require their own separate room with adequate HVAC systems, as required.

19.5 FAULT CURRENT AND PROTECTIVE DEVICE COORDINATION STUDY

Short circuit calculations shall be performed in design to establish appropriate equipment withstand ratings, relative to the available short circuit current at any given point in the distribution system. All electrical equipment shall be arc flash labeled per NFPA 70E.

A coordination study shall be performed to provide selective coordination for all over current protection devices. Results from the coordination study shall be used to select appropriate devices and set points.

The design engineer shall submit a preliminary computer generated short circuit analysis on all projects. The final coordination and analysis shall be done by the contractor’s testing agency or by the independent agency employed by the client. A report shall be submitted to the Field Operations Facilities Program Management Office Project Manager (FOF PMO PM).

19.6 LIGHTING

19.6.1 Lighting Design

A facility-wide lighting plan shall be developed by the lighting designer documenting the salient features of the design, including fixture selection, photometrics, coverage areas, and illumination levels, prior to the acceptance of the design. In general, the Illuminating Engineering Society, North America (IESNA) recommendations should be followed.

The following are general considerations for lighting at cargo facilities. More detailed requirements can be found in the data sheets for individual spaces. Additional guidelines also can be obtained from CBP.
• Lighting quality is an important consideration in many task areas, including offices, booths, inspection, and search areas, where glare would inhibit accurate assessments or cause fatigue.
• In office areas, parabolic fixture lenses with minimum cut off angle of 45 degrees should be used.
• Lighting is a major user of energy at a cargo facility. Fixture choices, controls to dim or turn off some lights during low use periods, and other energy-saving options should be part of the lighting design.

Lighting supports video surveillance throughout the facility; lighting design shall provide adequate lighting for all areas under surveillance and light fixtures shall not interfere with or negatively impact fields of view.

19.6.2 Lighting Levels

Average foot-candle (FC) level is indicated on the room data sheets. Acceptable maximum and minimum ranges of light levels shall meet the current edition of IES requirements. All interior lighting fixtures should be light-emitting diodes (LED). The LED fixture design may incorporate a liquid crystal display (LCD) panel backlight unit (BLU), as appropriate to the use.

Lighting level coverage for CCTV cameras shall satisfy lighting manufacturer’s requirements.

19.6.3 Exterior Lighting

This section provides exterior lighting requirements to guide design teams toward maximizing the visual aspects of the operating environment for CBP officers. The primary objective is to improve CBP operations and enhance officer safety. Improving energy efficiency where appropriate is a valuable secondary objective.

Operations benefit from lighting that provides good nighttime visibility by incorporating a combination of visual properties that operate in concert. Good color quality, appropriate uniformity, glare control, and balanced vertical/horizontal illuminance together support detailed inspection as well as mid- and long-range surveillance. Visibility will be compromised if all these criteria are not included in the lighting scheme. All criteria in this section shall be incorporated into the lighting for cargo facility sites.

Exterior lighting in remote areas may produce unwanted light emissions into neighboring properties. Light poles, multi-level lamps, angled fixtures, and shielding accessories shall be incorporated into all exterior lights to control light pollution.

Energy efficacy is accomplished by using efficient light sources combined with appropriate luminaire technology and controls that allow multiple levels of light that support visual tasks as they change. Energy efficiency techniques support good nighttime visibility by minimizing contrast and glare.

To ensure that the best visual environment is attained at cargo facility projects, the design team for all projects shall include an independent professional lighting designer.

This section is organized in sub-sections to provide: (1) specific visual quality requirements at cargo facility functional areas; (2) quantitative lighting criteria; (3) requirements for submittal of lighting calculation to verify compliance with this standard; and (4) general design guidance about lighting issues that directly affect visibility at cargo facility sites. The FC are used in this chapter as the primary measure for lighting criteria, with metric units (lux) provided in parentheses for cross-reference.
The technology of light sources appropriate for exterior application is rapidly changing. Current research is establishing reliable new criteria for visual acuity. Therefore, the following guidance references lighting industry standards from the IESNA which are regularly reviewed and updated by teams of industry experts to reflect current research and technology.

Because of the inherent lag between technological advancement and standards publication, in addition to IESNA Recommended Practices referenced in this document, design teams are encouraged to consider incorporating the latest research and leading edge, yet proven, technology into their work. This practice shall require compliance with the alternative means and deviations process discussed in Chapter 1.

The design team shall reference the current versions of following documents regarding design issues related to cargo facility sites. Design documents shall state which version was used.

- RP-8-00 Roadway Lighting.
- RP-20-98 Lighting for Parking Facilities.

Exterior

Exterior areas include the following sub-zones. Some zones apply to cargo inspection areas alone, and smaller facilities may have condensed zones.

19.6.4 Parking

Parking for staff and visitors is typically provided in separate areas and requires that people feel secure when leaving and approaching their vehicles. That feeling of security comes from good facial recognition. This necessitates a high level of uniformity as well as vertical illuminance. Staff parking is sometimes secured within a fence, but the same criteria apply.

19.6.5 Building Perimeter

An increased level of security is needed for 30 feet around the perimeter of the building. The perimeter area shall be visible from inside the building or from adjacent inspection areas as well as on CCTV coverage. Both vertical and horizontal illumination shall be double what is on the other pathways.

19.6.6 Exterior Lighting Criteria

Refer to the section on electrical distribution for the essential power system requirements. Site lighting except where required to be locally switched shall be controlled by photocell and time clock. Where specific areas are required to be locally switched, central override capabilities shall be provided. All site lighting that is on the

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1 Current lighting research shows that light in the blue-white range provides a higher degree of visual acuity than light in “warmer” tones. This applies to nighttime (Scotopic) light levels as well as higher daytime (Photopic) levels. Color temperatures in the 3500 to 6,000 K range provide the best visual performance. The increased visual sensitivity makes it possible to see better at lower light levels provided that the overall visual environment is favorable. This presents opportunities for reducing energy use while increasing visual acuity.
essential power system shall use either instant-on light sources or include emergency restrike technology to maintain minimum required light levels until normal power is restored and restrike is accomplished.

Table 19.1 provides illuminance levels and uniformity ratios required for specific lighting zones within functional areas throughout the facility’s exterior site. Horizontal illuminance is given as an average with uniformity requirements within the boundaries of each area because this metric covers ground planes where edges might comfortably drop below a minimum without affecting the overall visual acuity. The minimums are effectively determined by the uniformity ratio between average and minimum illuminance in the zone. The task plane for horizontal illuminance is assumed to be the ground for these functional areas. Vertical illuminance, typically measured at 5 feet from the ground surface, is given as a minimum because an officer's ability to see an object or person in their field of view is contingent upon a minimum amount of light falling on that vertical surface. Shadow areas shall have a negative effect on the visual acuity of that observer.

<table>
<thead>
<tr>
<th>Lighting Zone</th>
<th>Horizontal Illuminance Avg. fc (lux)†</th>
<th>Horizontal Uniformity Avg.: Min.</th>
<th>Vertical Illuminance* Min. fc (lux)†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dock</td>
<td>3 (32)</td>
<td>6:1</td>
<td>N/A</td>
</tr>
<tr>
<td>Building Perimeter</td>
<td>4 (43)</td>
<td>4:1</td>
<td>2 (22)</td>
</tr>
<tr>
<td>Parking</td>
<td>2 (22)</td>
<td>4:1</td>
<td>1 (11)</td>
</tr>
<tr>
<td>Perimeter Fence**</td>
<td>1(1.08)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* Measured at 5 feet above ground, facing the observer.
** 2 FC Illumination at 3’ height for perimeter fencing shall be maintained.
† Maintained

19.6.7 Exterior Photometric Calculations

The atypical nature of these facilities, along with the critical importance of exterior lighting to achieving CBP's mission throughout cargo inspection sites, necessitates the requirement that calculations be used to verify compliance with these standards. To verify that the site light level requirements shall be met, computer calculation summaries shall be provided during the design development phase of the project and updated during construction document phase.

Lighting calculations shall be performed for the following functional areas, as applicable to each project:

- Exterior cargo inspection.
- Building perimeter fence.
- Parking (public and staff).

Calculation Set Up

Exterior lighting calculations shall use the point-by-point method for maintained illuminance values. For areas under canopies, calculations shall include the inter-reflectance of adjacent surfaces. Horizontal points shall be on a grid no greater than 3 feet x 3 feet on center for all inspection areas and 10 feet x 10 feet on center for open site areas, at the task elevation (i.e. ground for site lighting). Vertical points shall be on a grid no greater than
10 feet on center at 5 feet above the ground. Vertical illumination data oriented towards the officers’ typical sightlines shall be provided.

Calculation Summaries

The calculation summaries shall include:

- **Fixtures**: Fixture description, initial fixture lumens, lamp lumen depreciation (LLD), luminaire dirt depreciation (LDD), ballast factor (if applicable), and name of photometric file.
- **Surfaces**: All surfaces used in the calculation (permanent objects, ground, floor, ceiling, etc.) and their assumed respective reflectance/transmission values.
- **Calculation results**: Identify area of calculation grid, description of grid, units used (FC), average, maximum, minimum, average to minimum, and maximum to minimum.
- **Plots**: Architectural/civil background drawings with point-by-point values overlaid at a readable font size. Provide scale of drawing. Provide as many plots as needed to show all areas of interest at a reasonable printed scale.
- **Renderings**: 3D renderings integral to the calculation program that include inter-reflectance are recommended. The 3D renderings can help the design team and reviewers better understand the lighting design. Identify the view shown in the rendering.

19.6.8 General Design Considerations

Energy Efficient Lighting Design

- Lighting design that combines principles of human visual perception with energy efficient light sources is referred to as energy effective lighting design.
- All LED troffers shall meet Commercial Building Energy Alliance: High Efficiency Troffer Specifications.

The elements of lighting that contribute to good outdoor nighttime visual acuity in high security areas are as follows:

- Appropriate relationship between horizontal and vertical illuminance.
- Balanced luminance contrast ratios between objects and areas to avoid glare.
- Uniformity of illuminance over areas within the visual field.
- Color quality of the light source.

The IESNA Handbook includes a chapter, Quality of the Visual Environment, that is the best source for detailed information on this subject.
Horizontal and Vertical Illuminance Ratios

The IESNA recommends setting both horizontal and vertical illuminance levels for specific tasks and establishing an appropriate relationship between the two. The ratio depends on the relative importance of the horizontal and vertical planes to the visual task. At cargo facilities vertical illuminance is important for tasks that require facial recognition, vehicle inspection, and reading container information. Illuminances in Table 19.1 are based on the relative importance of this relationship.

Glare

Direct glare is created when an object or area is substantially brighter than its surround (e.g., floodlight against a dark sky). The eye adjusts to the brightest object in its field of view, making the less bright area appear dimmer than it is. This can happen even if the bright object is in the peripheral vision. When an officer is focused on a container or person, his mission is compromised by direct glare.3

Reflected glare is created when the image of a relatively bright object is reflected into the eye by a polished surface such as a window. It is particularly a problem at cargo docks when the area viewed through windows is dark (e.g., dark night sky) and the reflection is a ceiling mounted light fixture. This condition results in a mission compromising condition in which the view outside can be obliterated, and on-coming vehicles are obscured.

Uniformity of Site Lighting

Uniformity of light level helps an observer perceive specific visual information within an area and adapt properly when moving through it. The criticality and type of the visual task, as well as the speed with which it needs to be accomplished, determine the acceptable range. Table 19.1 provides uniformity criteria for each lighting zone. Shadows from objects within the area have a negative effect on uniformity. Shadows directed away from the viewing officer are of lesser consequence compared to shadows cast in front an on-coming vehicle.

Light Spectrum and Color

Color rendering is a general term for the effect that a light source has on the apparent color of an object being illuminated. Color Rendering Index (CRI) defines how true a color appears under a light source in comparison to a theoretical reference source of comparable color temperature.4 A CRI of 85 or higher is critical to visual acuity with time constraints such as at inspection areas.5

19.6.9 Interior Lighting

The entire lighting system shall comply with the latest minimum ASHRAE 90.1 Standard.

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2 Vertical illuminance has orientation characteristics relative to the viewer's position and is usually measured at 60" (1500mm) above the ground. A high level of vertical illuminance in relation to horizontal illuminance (in excess of 1v:1h) risks glare since it is best accomplished with light emitted at high angles from a luminaire.

3 IESNA Technical Manual, TM-15-07 (revised), revised the classification system for outdoor luminaires beyond the “cut-off” terminology that had been prevalent for many years. The TM-15-07 defines multiple solid angles within the light distribution pattern from a luminaire. It allows for greater accuracy in predicting the potential for direct glare from outdoor luminaires. Light emitted at higher angles presents the greatest glare challenge. Care shall be taken that it is directed away from the critical viewing angle. The Luminaire Classification System (LCM) in the Technical Manual is an excellent aid in controlling these critical angles.

4 Both sunlight and halogen incandescent are considered to have a CRI of 100%.

5 The CRI is a product of a system that may include a ballast (or transformer), controls, and/or the lamp or LED. Ceramic metal halide lamps designed for use with electronic ballasts shall not perform up to the specified level if they are run on magnetic ballasts.
Daylighting

Daylighting typically refers to two separate concepts: the ability of occupants to see outdoors and the displacement of electric lighting due to harvesting the daylight.

Daylighting techniques shall be analyzed to apply for projects for comfort level, increased productivity, energy saving, and increased project cost. Daylight harvesting system can be used to offset electric light and photosensors and dimming modules can be used to control electrical lights.

Standard Office Lighting

The LED lighting shall be the standard office lighting system. Dimming is required for interior lighting where supervisors monitor inspection spaces or cargo facility operations.

Lighting Zones

Light switching shall correspond to zones that are occupied at different times. The use of time switches, photoelectric light sensors or occupant sensors shall be incorporated into the design. Switches shall be accessible to disabled individuals in general office areas.

Emergency Lighting

Interior emergency and egress lighting may be battery ballast in selected LED fixtures or emergency wall packs.

Recommended lighting level ranges

- 40-70 FC in inspection and inspection support spaces.
- 30-40 FC for general office spaces and conference rooms.
- 20-30 FC mechanical and electrical rooms.
- 20-30 FC for storage spaces.
- 10-20 FC in corridors.

19.6.10 Compliance with (Federal) Energy Regulations and Standards

Energy efficient lamps and ballasts in all LED fixtures should be provided. To optimize energy conservation, artificial light shall be supplemented by natural light (daylight). At cargo facilities along the U.S./Canada border, an analysis of available daylight may be needed to determine its suitability for use in specific situations. Low sun angles and short daylight periods reduce the effectiveness of natural light, particularly for areas with direct sunlight exposure rather than diffused exposure. If photoelectric dimmers are used, they shall be “continuous” (i.e., make smooth changes in light levels) rather than “stepped” or incremental (which make larger jumps in light levels), so that occupants do not become uncomfortably aware of their operation.

19.7 GROUNDING

A facility-wide comprehensive grounding system shall be designed to establish a common ground plane for all equipment. All facilities shall incorporate an earth electrode system (EES) consisting of buried copper cables and ground rods. The EES shall provide a low resistance to earth for lightning discharges, electrical and
electronic equipment grounding, power fault currents, and surge and transient protection. The EES shall be capable of dissipating within the earth the energy of direct lightning strikes with no ensuing degradation to itself. The system shall dissipate DC, AC, and radio frequency (RF) currents from equipment and facility grounding conductors.

The EES shall encircle the building foundation, including the areas designated for future building expansion. At facilities that have two or more structures separated by 15’ or less, a single EES surrounding both structures shall be provided. Where structures are separated by more than 15’, but less than 30’, an EES shall be provided for each structure, but the EES for each structure shall be allowed to share a common side. Where structures are separated by more than 30’, an EES shall surround each structure and the EESs shall be interconnected by at least two buried ground conductors. All underground metal objects entering the facility such as pipes, conduits, and building structural members, shall be bonded to the EES. Access to the EES shall be provided through a grounding well with a removable cover. All below-ground connections shall use an exothermic weld. A multi-point grounding system shall be employed throughout the facility buildings.

19.8 LIGHTNING AND SURGE PROTECTION

19.8.1 Lightning Protection

A lightning protection system (LPS) shall be provided for all CBP facilities to protect sensitive equipment from damage by lightning surges and prevent personnel injury and property damage. The LPS shall be designed in accordance with the current editions of NFPA 780 and UL-96A, Installation of Lightning Protection Systems. A UL master label shall be required. The requirement of a “master label” imposes certain restrictions or limitations on the design of the system. These limitations may conflict with the architectural design, particularly if the façade includes large curved surfaces that preclude the installation of air terminals and where the spacing of down conductors are limited. In these instances, the design engineer may appeal to the contracting officer to waive the “master label” requirement because the design generally follows the “Faraday Cage” principle of lightning protection. Lightning protection shall be provided to all building structures at the cargo facilities. A connection shall be installed to sprinkler system at supply side of backflow preventer only.

19.8.2 Surge Protection

A surge arrester provided with disconnect capability shall be installed on the line side (supply-side) of the facility main service as close as possible to the service terminals. Separate terminating lugs shall be provided for the surge arrester. This arrester shall be compatible with the service voltage; wired to avoid loops, sharp bends and kinks; and minimize the number of bends. There shall be no interconnection between neutral and ground within the arrester. Similar requirements shall be employed for all communications lines entering the facility. Surge protection shall be provided to all buildings and ports electrical systems. Surge protective devices, as defined by UL 1449, shall be provided for all panels serving equipment loads located outside. Where installed, transit voltage surge suppression (TVSS) devices shall be installed per manufacturer’s recommendations. Surge or lightning protection systems shall not interfere with communications/data cabling functions, including but not limited to booth/lane equipment.
19.9 ELECTRICAL PRODUCTS

19.9.1 General

The following sections list definitions of the various types of wiring devices, lighting controls, and lighting fixtures anticipated in cargo facilities. Each product has been assigned a reference number, a short descriptive name, and a full description of the required features. These definitions are tied to the short descriptive name found in Chapter 22, Room Data Sheets, and are for reference only.

19.9.2 Wiring Devices

A. Color of Wiring Devices

Emergency (essential power) receptacles shall be red. Isolated grounding receptacles shall be orange. Special purpose receptacles and dedicated receptacles shall be grey. The color of standard receptacles and switches shall be coordinated with the architectural color scheme, for example, white, not ivory, devices shall be used if walls are white or light grey.

B. Convenience Receptacles

Convenience receptacles shall be 125V, 20A and comply with NEMA WD1, NEMA WD6 Configuration 5-20R, UL 498, and FS-W-C-596. Where receptacles and data/communication outlets are specified for the same location, a combination receptacle with both is preferred. Receptacles throughout administrative and support spaces shall exceed code requirements to allow maximum flexibility of space use.

- R-1 Receptacle, recessed in wall, standard duplex.
- R-1A Receptacle, recessed in floor, standard duplex.
- R-1B Receptacle, recessed in wall, quad minimum.
- R-2 Receptacle, surface mounted.
- R-3 Receptacle, surface mounted in plug mold.
- R-4 Receptacle, flush/surface mounted.
- R-5 Receptacle, recessed power/data floor box, 2 duplex minimum.
- R-6 Receptacle, recessed mounted ground fault circuit interrupter (GFCI).
- R-7 Receptacle, integrated workstation, 3 duplex minimum.
- R-8 Receptacle, dedicated UPS-fed.
- R-WP Receptacle, weatherproof GFCI.
- R-9 Receptacle, dedicated for copier, verify type and voltage.
- R-10 Receptacle, dedicated for wall-mount TV.

C. Lighting Control

Programmable lighting control systems should not be used.

LC-1 Light switch: All switches should be rocker type, rated at 120V/277V, 20A, and comply with NEMA WD1, UL20, and FS-W-S-896.
LC-2  Dimmer switch: Dimmer switches should be slide type, full-wave solid-state units with integral, quiet on-off switches and audible frequency and electromagnetic interference/radio frequency interference (EMI/RFI) suppression filters.

LC-3  Occupancy sensor: Occupancy sensors should be dual technology or ultrasonic type and listed and labeled as defined in the current NFPA standard, by a qualified testing agency, and marked for intended location and application. Unless otherwise indicated, sensor turns lights on when coverage area is occupied and turns them off when unoccupied. Sensor should have a time delay, adjustable over a minimum range of 1–15 minutes, for turning lights off. Occupancy sensors should be provided for the following spaces and occupancy types:
- Enclosed offices.
- Conference rooms.
- All pantries, kitchens, and dining areas.
- All storages and file areas.
- Any other regularly occupied spaces.
- Occupancy sensors should not be used in electrical rooms, mechanical rooms, waiting areas, public restrooms, or detention areas.

LC-4  Combination wall switch with occupancy sensor: Wall mounted wall switch per C-1 (with occupancy sensor per LC-3). Occupancy sensors should be dual technology or ultrasonic type and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application. Unless otherwise indicated, sensor turns lights on when coverage area is occupied and turns them off when unoccupied. Sensor uses a time delay, adjustable over a minimum range of 1–15 minutes, for turning lights off, all switches should be rocker type, rated at 120V/277V, 20A, and comply with NEMA WD1, UL20 and FS-W-S-896

LC-5  Combination wall switch with occupancy sensor and dimmer.

LC-6  Dimmable back-lit switch: Same as dimmer switch with modification to allow timeout setting for touch button backlight; if no specific activity occurs in timeout (delay), the backlight should turn off.

LC-7  Jamb switch: Jamb switches, push button type located in door jamb or door head, should be used in closets to turn on/off light fixture with opening/closing of door. They should be rated for 10A and use 29/32 mounting hole.

LC-8  Exterior photocell control: Photocell control for exterior light fixtures should be used to activate lighting at night.

LC-9  Individual control for task light.

D. Lighting Fixtures

L-1  Lighting fixture, direct/indirect, recessed 2’ x 2’ or 2’ x 4’, 80+ CRI Lamp: Direct/indirect lighting fixtures should be used in offices, work area, conference room, document handling rooms, training rooms, waiting areas, and similar office and public spaces. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000° Kelvin, 80+ color rendering index (CRI). Fixture should have dimming capability.
L1-A  Lighting fixture, direct/indirect, recessed 2’ x 2’ or 2’ x 4’, 85+ CRI Lamp: Direct/indirect lighting fixtures should be used in inspection spaces as indicated. The LED fixtures should be used. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI. Fixture should have dimming capability.

L1-B  Lighting fixture, direct/indirect, recessed 2’ x 2’ or 2’ x 4’, 94+ CRI Lamp: Direct/indirect lighting fixtures should be used in inspection spaces as indicated. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI. Fixture should have dimming capability.

L-2   Lighting fixture, recessed 2’ x 2’ or 2’ x 4’ acrylic lens, 80+ CRI lamp: Acrylic lens lighting fixtures should be used in storage, laboratories, inspection spaces, and similar areas. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI. Fixture should have dimming capability. Where located on gypsum board or other hard ceilings (except detention areas), lamp may be surface mounted type.

L-2B  Lighting fixture, recessed 2’ x 2’ or 2’ x 4’ acrylic lens, 85+ CRI lamp: Acrylic lens lighting fixtures should be used in inspection spaces as indicated. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI. Fixture should have dimming capability. Where located on gypsum board or other hard ceilings (except detention areas), lamp may be surface mounted type.

L-2C  Lighting fixture, recessed 2’ x 2’ or 2’ x 4’ acrylic lens, 94+ CRI lamp: Acrylic lens lighting fixtures should be used in inspection spaces as indicated. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI. Fixture should have dimming capability. Where located on gypsum board or other hard ceilings (except detention areas), lamp may be surface mounted type.

L-3   Lighting fixture, recessed 1’ x 4’ direct/indirect: Direct/indirect lighting fixtures should be used in offices, work areas, and conference rooms only. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixtures should deliver 4,000º Kelvin, 80+ CRI.

L-4   Lighting fixture, surface mounted or pendant 1’ x 4’ direct/indirect: Direct/indirect lighting fixtures should be used in offices, work areas, conference rooms, and similar locations. Surface mounted fixtures should be used on gypsum board or other solid ceilings only. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixtures should deliver 4,000º Kelvin, 80+ CRI. Fixtures should have dimming capability.

L-5   Lighting fixture, recessed 1’ x 4’ acrylic lens: Acrylic lens lighting fixtures should be used in laboratories, storage rooms, and other utility spaces. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixtures should deliver 4,000º Kelvin, 80+ CRI.

L-6   Lighting fixture, surface mounted 1’ x 4’ acrylic lens: Surface mounted acrylic lens lighting fixtures should be used in laboratories, storage rooms, and other utility spaces on gypsum board or other hard ceilings. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixtures should deliver 4,000º Kelvin, 80+ CRI. Fixtures should have dimming capability.
L-7 Lighting fixture, recessed 6" downlight, 85+ CRI lamp: Recessed downlight fixtures should be used as special use or accent fixtures in offices, conference rooms, and public waiting areas. Wall washer fixtures may be used in lieu of or in combination with recessed down light fixtures. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI. Fixture should have dimming capability.

L-7A Lighting fixture, recessed 6” Down, 94 CRI lamp: Recessed down light fixtures should be used in inspection spaces as indicated. Wall washer fixtures may be used in lieu of or in combination with recessed down light fixtures. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 94+ CRI. Fixture should have dimming capability.

L-8 Lighting fixture, recessed mounted lensed down light: Recessed lensed down light fixtures should be used in restrooms and showers only. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI. Fixtures in showers and exterior canopies should be rated for wet location. Public restroom fixtures should have tamperproof housing/mounting.

L-9 Lighting fixture, pendant mounted industrial protected: Pendant mounted lights should be used in mechanical rooms, electrical rooms, and other utility areas with exposed structure ceiling. Wire guards shall be used on each fixture. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI.

L-10 Lighting fixture, recessed mounted detention grade: Recessed ceiling mounted medium detention grade lighting fixtures shall be used in the detention suite. Mounting shall use tamperproof connection. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI. Fixture shall have dimming capability.

L-11 Lighting fixture, surface mounted detention grade: Surface mounted ceiling medium detention grade lighting fixtures shall be used in the detention suite. Mounting shall use tamperproof connection. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI. Fixtures shall have dimming capability.

L-12 Lighting fixture, wall mounted 1’ x 4”: Wall mounted lighting fixtures should be used above the mirror in CBP officer restrooms only. Fixture may be manufacturer’s decorative or custom built-in cove. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI.

L-13 Lighting fixture, surface mounted under cabinet: Indirect under cabinet surface mounted lighting fixtures should be used above counter as task light only. The LED fixtures are needed. The LED fixture design may incorporate LCD-panel BLU. The LED fixture should deliver 4,000º Kelvin, 80+ CRI.

L-14 Lighting light fixture, decorative surface mounted or pendant: Surface mounted or pendant mounted decorative light fixtures may be used for special purposes, such as conference rooms and break rooms. Fixtures may be direct, indirect, or direct/indirect type. All decorative fixtures should be commercial grade. The LED lamps should have capability to provide 4,000º Kelvin. The LED fixture should deliver 4,000º Kelvin, 80+ CRI. Other common lamps with similar characteristics may be considered.

L-15 Lighting fixture, surface mounted task light: Surface mounted desktop task lights or under cabinet lighting are integral to furniture system. The LED lamps should have the capability to provide 4,000º Kelvin.
The LED fixture should deliver 4,000° Kelvin, 80+ CRI. Other common lamps with similar characteristics may be considered. Fixtures should be provided in interior design package.

L-16 Light fixture, surface-mounted high bay: Surface-mounted HIGH BAY light shall be used under canopies and shall be an HID/LED lamp. The LED lamps shall have the capability to provide 5300 Kelvin 70+ CRI. The HID light fixture shall deliver 4000 Kelvin, 70+ CRI. Contractors shall verify that fixture meets clearance requirements above pavement before establishing spacing.

L-16A Light fixture, surface-mounted high bay, 85 CRI Lamp: Surface-mounted HIGH BAY light shall be used in inspection spaces as indicated and shall be an HID/LED lamp. The LED lamps shall have capability to provide 5300 Kelvin 70+ CRI. The HID light fixture shall deliver 4000 Kelvin, 70+ CRI. Contractors shall verify that fixture meets clearance requirements above pavement before establishing spacing.

L-17 Lighting fixture, surface-mounted or recessed canopy: Surface-mounted or recessed lighting fixture shall be used under open or enclosed canopies and shall be an HID lamp or LED lamp. The LED lamps shall have capability to provide 4000 Kelvin. The LED light fixture shall deliver 4000 Kelvin, 80+ CRI. The HID light fixture shall deliver 4000 Kelvin, 70+ CRI.

L-18 Light fixture, wall mounted flood: Wall-mounted flood lights shall be used for under canopy at loading docks and positioned in the direction of the back of truck vehicles. They shall be HID lamp or LED lamps. The LED lamps shall have the capability to provide 4000 Kelvin. The LED light fixture shall deliver 4000 Kelvin, 80+ CRI. The HID light fixture shall deliver 4000 Kelvin, 70+ CRI.

L-19 Lighting fixture, parking lot, 24-30 Ft. pole-mounted, 70 CRI Lamp: A 24- to 30- foot pole mounted area lighting fixture shall be used for the open space parking lot. They shall be an HID lamp or LED lamps. The HID/LED lamps shall have the capability to provide 4000 Kelvin. The LED light fixture shall deliver 4000 Kelvin, 70+ CRI. The HID light fixture shall deliver 4000 Kelvin, 70+ CRI.

L-19A Lighting fixture, parking lot, 24-30 Ft. pole-mounted, 85 CRI Lamp: A 24- to 30- foot pole mounted area lighting fixture shall be used in inspection spaces as indicated and shall be HID lamp or LED lamps. The HID/LED lamps shall have capability to provide 4000 Kelvin. The LED light fixture shall deliver 4000 Kelvin, 85+ CRI. The HID light fixture shall deliver 4000 Kelvin, 70+ CRI.

L-19B Lighting fixture, parking lot, 10-14 Ft. pole-mounted, 70 CRI Lamp: A 10- to 14-foot pole mounted area lighting fixtures shall be used for open space parking lots and shall be HID lamp or LED lamps. The HID/LED lamps shall have capability to provide 4000 Kelvin. The LED light fixture shall deliver 4000 Kelvin, 70+ CRI. HID light fixture shall deliver 4000 Kelvin, 70+ CRI.

L-20 Lighting fixture, surface mounted enclosed parking space: Surface-mounted lighting fixtures to shall be used for indoor enclosed parking or storage spaces and shall be HID or LED lamps. The LED lamps shall have capability to provide 4000 Kelvin. The LED light fixtures shall deliver 4000 Kelvin, 80+ CRI. The HID light fixtures shall deliver 4000 Kelvin, 70+ CRI.

L-20A Lighting fixture, surface-mounted enclosed parking space true color CRI lamp: Lighting fixtures shall be the same as “L-20” and provide true color with 85+CRI lamp type. They shall be installed in inspection spaces as indicated.
L-21 Lighting fixture, surface mounted fully enclosed and sealed: Surface mounted light fixture for wet location, light fixture shall be used in exterior locations such as chain linked sallyport. LED lamps shall have capability to provide 4,000-degree Kelvin 80+ CRI. HID fixture shall deliver 4000 Kelvin, 70+ CRI.

L-22 Light fixture, recessed-mounted fully enclosed and sealed, hazardous material rated: This fixture is a recessed mounted light fixture for wet locations and shall meet the NEC hazardous classification, as applicable.

L-23 Lighting fixture, universal mounted LED exit: Universal mounted exit sign fixtures should be used in established paths of egress. The fixture should be low energy consumption, high intensity red illumination standard. Fixture should have Ni-Cad ETL listed 90 minimum run time battery.

E. Lamps

Efforts shall be made to minimize the number of lamp types within a facility to simplify lamp maintenance. The LED lamps shall be used.

Metal halide lamp fixtures designed to be operated with lamps greater than or equal to 150W, but less than or equal to 500W, should contain electronic ballast with ballast efficiency of 92% for wattages greater than 250W and minimum ballast efficiency of 90% for wattages less than or equal to 250W.

Lamps should have a CRI greater than or equal to 70. The minimum rated life should be 10,000 hours.
CHAPTER 20 - DATA PROCESSING AND VOICE COMMUNICATIONS

20.1 INTRODUCTION

This chapter provides the minimum requirements and performance specifications for the U.S. Customs and Border Protection’s (CBP) information technology (IT) systems provided at a cargo facility. CBP’s IT standards outlined in this chapter are the minimum requirements necessary to provide a consistent approach to IT programs and installations at cargo facilities. Additional IT needs beyond these minimum requirements may be determined by CBP, based on project-specific operational requirements, risk mitigation strategies, policies, and regulations.

These systems and strategies are incorporated into a comprehensive IT design plan. These design plans, collaboratively developed by stakeholders, shall outline the equipment, procedures, maintenance, responsibilities, contacts, and other information associated with the implementation and operation of the IT systems. CBP determines project-specific IT system requirements and operations and communicates those requirements to the cargo facility operator (CFO).

The ability to expand an IT system shall be incorporated into the facility design to accommodate long-term expansion and to include additional conduit and cabling requirements.

20.2 RESPONSIBILITIES

20.2.1 Office of Information and Technology

The Office of Information and Technology (OIT) determines data and voice communication equipment specifications and requirements for CBP. The OIT shall provide and install all data processing system hardware. The OIT furnishes specific computer/communications room layouts and equipment specifications for each facility. The OIT is the sole authority for making any changes to the specifications outlined in this chapter, including any emerging technologies required to support CBP operations. The installation and maintenance of cables and conduit shall be the responsibility of the CFO.

The OIT shall determine the local area network (LAN) topology, including adequate electrical power, uninterruptible power supply (UPS), heating, ventilation, and air conditioning (HVAC), to ensure optimum equipment performance. The OIT shall also ensure all infrastructure is properly installed for the data processing and voice communications systems, including duct banks between buildings, entrance raceways, backboards, punch down blocks, cable trays, conduits, data and voice jacks throughout the facility, power panels, and receptacles. The OIT shall ensure secure conduit, at a minimum, is installed for all CBP cabling through public space.

20.2.2 Cargo Facility Operator

The CFO shall provide and install all necessary hardware and data cabling for data processing and voice and tactical communications systems. CBP acquires the systems with reimbursement by the CFO. The CFO shall be responsible for funding the acquisition of all automated data processing (ADP) and tactical communications equipment necessary to support operations performed by CBP officers. The CFO shall reimburse CBP for all systems infrastructure for data processing, tactical, and telecommunications systems that support CBP operations.
The CFO shall support CBP’s local area network (LAN) topology, including adequate electrical power, uninterruptible power supply (UPS), and proper HVAC, to ensure optimum equipment performance. The CFO shall provide systems infrastructure for the data processing, and voice and tactical communications systems, including entrance raceways, backboards, punch down blocks, wire way, conduits, data and voice jacks throughout the facility, power panels, and receptacles. The CFO shall also provide dedicated secure conduit, at a minimum, for all CBP cabling through public space. Sharing of conduit with CFO or other non-CBP entities is not permitted.

20.3 COMPUTER AND VOICE COMMUNICATIONS SYSTEMS

The network generally includes fileservers, voice over internet protocol (VOIP), personal computers, printers, additional computer peripherals, and any other necessary hardware and software. The CFO shall provide all necessary infrastructure to support the chosen topology, including standard electrical power, UPS, and HVAC to ensure optimum equipment performance. All required cabling and conduit shall be furnished and installed by the CFO. The procurement, installation, and retirement of any technology equipment shall be coordinated and approved by OIT and the Field Operation Facilities Program Management Office Project Manager (FOF PMO PM).

20.3.1 CBP Local Area Network

The government uses the CBP LAN to retrieve, report, and manage information. Access is through a network of computer peripherals located in various operational areas of the CBP security areas (CSA). Systems hardware is located in the LAN room. A specific room layout and hardware requirements will be furnished by CBP for each facility. Dedicated data circuits connect this room to the off-site wide area network (WAN). The CFO shall provide and install adequate cabling and conduit, as specified by the OIT, to ensure the proper operation and security of this system.

CBP areas that are networked together include, but may not be limited to:

- LAN room.
- Supplemental local area network (SLAN) room.
- Intermediate distribution frame (IDF) room(s).
- Processing booths (where applicable.)
- Secondary processing area(s).
- CBP operational support area.

Wiring access to many areas can only be achieved through properly placed and sized conduit. Planners shall consult with OIT in the early stages of project development. The FOF PMO PM will coordinate these requirements with OIT. The installation of proper cabling and conduit is significant in open office configurations because a number of desks and/or officer workstations are not located adjacent to a wall surface. CBP wiring standard is one voice drop, two data drops, and one electrical quadruplex outlet for each desk and/or workstation location. Each networked printer shall have two data drops and one quadruplex electrical outlet. Each FAX machine shall have one voice drop and one duplex electrical outlet. Private offices should have a minimum of one outlet, one voice drop, and one data drop on each wall to provide alternative furniture configurations. The OIT will assist in IT planning to ensure that adequate cable and conduit is provided.
20.4 ELECTRONIC EQUIPMENT

20.4.1 Local Area Network Topology

The current OIT standard is the Ethernet (1000 Base-T) star-wired LAN topology. The OIT cabling standards make use of unshielded twisted pair (UTP) Category 6-A, 568B copper cable, and fiber optic cable where necessary. The OIT will make the final decision regarding cabling topology during project planning.

CBP provides the data and phone circuit requirements for these networks. The CFO shall furnish and install the appropriate cabling and conduit to support the current application and future capacity at no cost to CBP.

20.4.2 Data Cabling Requirements

All cabling specifications and materials shall be coordinated with and approved by OIT.

Network wiring shall be UTP Category 6-A, 568B blue plenum rated cable or equivalent.

The CFO shall terminate cable with the appropriate Category 6-A, 568B parts. All wiring terminations in the LAN room shall be on rack mountable patch panels. Kit data inserts shall be female RJ45 Category 6-A, 568B rated. All terminations shall meet the TSB-40 specification.

All cabling shall be tested to accepted industry standard for the four-way certified testing of cable runs. All cables shall be correctly labeled at both ends.

The length of UTP Category 6-A, 568B cable from the termination point to a workstation on the processing floor or in an operational support, area cannot exceed 300 linear ft, including the necessary patch cables. Where exceeding this limitation cannot be avoided, fiber optic cable shall be provided. The CFO shall terminate fiber optic cable with OIT-approved connectors.

The CFO shall provide conduit and cabling to accommodate the voice and data circuits from the local exchange company’s (LEC) point of presence (POP) into the CSA. Cabling and conduit shall be installed from the LAN to the LEC POP.

Conduit, where provided, shall be sized to accommodate current needs and future growth.

20.4.3 Voice Cabling Requirements

Cabling shall be 24-AWG unshielded, twisted four pair copper, blue, or gray plenum-rated conforming to EIA/TIA, TSB-36, Category 6-A, 568B requirements.

Wire ends should terminate on rack mounted Category 6-A patch panels in the LAN/IDF rooms and wall outlet terminal blocks.

All associated voice cables and station cables shall be labeled at each end and tested to industry accepted 4-way certified testing of 100 percent cable runs.

The CFO shall have the responsibility to furnish and install sufficient cabling and conduit to support the telephone and data circuits in the LAN room. This responsibility includes providing appropriate cabling and conduit from the main DEMARC room to the LAN room and between this room and any associated closet.
The OIT will make all final decisions regarding the facility needs as they relate to these specifications; therefore, it is critical for the designer to coordinate with OIT early in the planning phase.

### 20.5 POWER REQUIREMENTS

#### 20.5.1 Amperage and Voltage

The CFO shall provide adequate power (voltage and amperage) to ensure the proper operation of all equipment in the CSA.

#### 20.5.2 Power Supply

All facility data and communications systems elements shall be considered critical and must be provided with a back-up power source.

The CFO shall provide an isolated power supply for the LAN, SLAN, and telecommunications systems with emergency generator backup capable of supporting the initial power load of all equipment in the LAN, SLAN, and IDF rooms. In addition, the CSA shall incorporate a seamless cutover mechanism switch to the facility’s main back-up power generator to fully support CBP operations in the event of a power loss or interruption.

### 20.6 VOICE SYSTEMS

Due to varying requirements among cargo facilities, OIT will design a telecommunications (voice) system and furnish infrastructure criteria for each site based on user requirements. For security purposes, the CBP telecommunications system shall be a complete standalone system with the CFO retaining no connectivity, control, or administrative rights over the system. Telecommunications systems are housed in close proximity to the technology equipment and have specific power (including UPS) and HVAC requirements. The CFO shall provide all power, cabling, and conduit to support the chosen configuration. The OIT will develop specifications for each facility during project planning. The CFO shall consult with OIT prior to equipment/systems selection.

### 20.7 WIRELESS COMMUNICATIONS

This section contains the current OIT wireless installation requirements for new or renovated CBP facilities. As CBP moves forward with the use of wireless LAN (WLAN), CBP will be able to reduce cabling requirements in new facilities.

#### Cargo Facility Operator's Responsibilities

The CFO shall provide all the necessary construction and infrastructure to support the implementation of wireless technology into the CBP facility. This includes, but is not limited to:

- Cabling of wireless access points (WAP).
- Power to the WAP, as needed and determined by OIT.
- Installation of the WAP.

#### Office of Information Technology's Responsibilities

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The OIT is responsible for all network and wireless design as well as network equipment associated with the implementation of the CBP wireless network at the CSA. This includes, but is not limited to:

- Conducting three wireless surveys.
- Providing network designs for wireless network.
- Purchasing and installing wireless network equipment (with costs to be reimbursed by the CFO).
- Providing connectivity from patch panels to CBP network.
- Testing wireless network.
- Ensuring wireless security configurations.

Requirements

Wireless devices within the CSA are provided network access through the WAPs. The final locations of the WAP shall be determined after OIT performs an active wireless survey. The architect/engineer (A/E) shall provide the following specification within their design:

1. Quantity of WAPs

   The CFO shall configure the wireless infrastructure based on the amount of square feet and/or the number of connections to be supported. CBP’s intention is to support wireless communication throughout the facility with the exception of identified secure/classified areas. The number of WAPs required is as follows:
   - One WAP supports 3,000 square feet or up to 25 connections, whichever solution provides the most WAPs. The CFO should configure for more not less; this configuration can be reduced during the design and wireless surveys of the project.
   - The proposed number of the WAPs shall be provided to OIT at the 30% site design review.

2. Cabling

   The OIT provides a predictive survey for the locations at the 30% design reviews. The final locations cannot be determined until the majority of the walls are in place and OIT conducts an active survey. The OIT provides cabling actions in the cable statement of work (SOW) for the project. All SOW conditions and provisions listed in the SOW document are relevant to the WAP cabling, including the cabling testing and validation.

   For each WAP, CFO shall complete the following:
   - Install two Category 6-A UTP Plenum-rated yellow-sheathed cables.
   - Terminate each cable on CFO-furnished duplex data outlets above raised ceiling and current or new Category 6-A Patch Panels in LAN room or IDF, whichever is applicable. All patch panels should account for a 20% growth factor.
   - Use cable runs of less than 300 feet.
   - Provide 7-foot yellow patch cables for each.

3. Power
For most locations, CBP’s LAN switch provides power for the WAPs. Occasionally, depending on distance or other unknown factors, CFO shall provide a circuit to meet the power draw requirements of the WAPs. Those instances shall be determined during the 30%, 60%, and 90% design reviews.

4. Installation of WAPs

The CFO shall be responsible for installing the WAPs into the fixed ceiling.

Design

The OIT is responsible for all aspects of the wireless network design for the CSA. The OIT will follow its processes in network and wireless design. The OIT will provide the A/E design team with applicable and timely information for the CFO to complete the requirements without affecting the construction schedule.

As part of the design, OIT will conduct surveys: two of the surveys will be conducted on-site during specific stages of the construction.

Predictive Survey – 30% Design Review

- To be completed when plans exist, but construction has not yet started.
- To obtain a budgetary environment for WLAN-related hardware and cabling.

Passive Survey – On-site during construction

- Perform with a listen-only mode.
- Identify rogues.
- Locate radio frequency (RF) trouble zones quickly.
- Validate final RF setting.
- Perform initial surveys.

Active Survey

- Basic Service Set Identifier (BSSID) Method: this method locks a client into an access point (AP)’s radio media access control (MAC) address and prevents the client from roaming.
- Service Set Identifier (SSID) Method: The SSID is more commonly used for post-deployment scenarios and for multiple AP surveys. This method enables the survey client to associate to an SSID where the client roams between multiple APs.

Implementation

The OIT will be responsible for ordering, implementing, and installing the wireless network, except for the WAP installations within the fixed ceiling. The CFO shall provide the diagram and final layout of the WAPs to OIT prior to network activation. The CFO shall indicate on the plans the specific MAC address and locations of the WAPs.

The OIT will also provide the specifications and requirements for wireless equipment procurement and installation to the CFO. During the design phase, OIT will determine network power requirements, the number
of CFO-provided communications racks, and the LAN/IDF layouts. All these items shall be installed prior to the
LAN room readiness check.

20.8 TACTICAL COMMUNICATIONS

Tactical communications equipment requirements, including radios, shall be coordinated with CBP. The
location of tactical communications antennas for facilities shall be coordinated with CBP and local
municipalities. Tactical communications equipment and installation are included among items to be procured
by CBP and reimbursed by the CFO.

20.9 INFRASTRUCTURE REQUIREMENTS

The IT components shall be industrial quality with proven functional designs and have documented
performance data collected from similar applications in continuous operation for a minimum of one year. Data
cabling and wiring must pass industry standard testing and proof of successful testing shall be submitted to
OIT for acceptance. Any installation OIT determines could be accessed by unauthorized persons shall be tamper-
protected by a CBP-approved method.

20.9.1 Local Area Network Room

The LAN room combines voice, data, and other systems into one area within the facility. The LAN room shall
accommodate a minimum of four full-size lockable 19” racks for the LAN equipment. The size depends on the
technology, both hardware and software, chosen for the location and expected future needs. The room shall
accommodate the telephone system, communication system cabling terminus, routers, switches, and other
system equipment.

The LAN room should be located as centrally as possible in relation to the areas served. The LAN room shall
not be located on an exterior wall of the CSA. Equipment rooms and closets in buildings with more than one
level should be stacked to reduce the number of bends in vertical distribution pathways. Minimum room size
shall be 180 sq. ft; it should accommodate the identified equipment and have room for expansion. These rooms
shall not be collocated with, or adjacent to, spaces producing electromagnetic frequencies, such as transformers,
emergency generators, or microwave communications. After a 300 ft conduit run, an IDF shall be added or fiber
connections shall be used to connect to the LAN room. The LAN rooms are connected to an IDF with fiber
connections.

The LAN rooms shall be separate from all other tenants and/or agencies. Co-location with non-DHS/CBP
entities is not permitted. The room shall be constructed in accordance with the current CBP Security Policy and
Procedures Handbook (SPPH).

The walls designated for the telephone equipment and wall-mounted equipment shall be covered with 8’ high x
4’ wide x ¾” thick sheets of plywood and painted with fire retardant paint. The preferred floor finish shall be
resilient vinyl tile, but a raised floor with an anti-static floor finish may also be considered. Ceilings shall be
open to the slab above. A dedicated HVAC service shall be sized for the equipment load in these rooms and
provide 24-hour temperature and humidity control to maintain conditions compatible with the computer and
telephone equipment manufacturers’ recommendations.

Local Area Network Room Power Requirements
The CFO shall provide dedicated, line-isolated, quad, and/or dual filtered electrical outlets. The number of required outlets depends on the equipment installed in the room. At a minimum, the LAN room shall have two dedicated line-isolated quad electrical outlets on each wall 18” above the finished floor. A separate power panel with a master switch and four to five circuits shall be provided. The CSA shall have a power line conditioner in each panel that provides less than one cycle voltage regulation and a transit voltage surge suppressor (TVSS). Grounding, lightning protection, labeling, and conduit distribution shall be installed in accordance with the Federal Information Processing Standards (FIPS) 187 and 195. Telecommunications Building Wiring Standards (TIA/EIA), or applicable local standards. In addition to the required dedicated electrical circuits, the LAN room shall have an adequate number of voice and data drops, per local code.

A separate power distribution unit with expansion capability shall supply the LAN room and shall be placed on a separate UPS system. Outlets within the LAN room must be wired to the UPS system to maintain continuous and stable equipment power. The LAN room should be located away from any space producing an electromagnetic frequency, such as a transformer, an emergency power generator, or microwave communications. Additional equipment circuiting requirements shall be coordinated with OIT during the design and planning stage.

20.9.2 Supplemental Local Area Network Room

In addition to the LAN room, the SLAN room contains head-end equipment needed for the access control, intrusion detection system (IDS), closed-circuit television (CCTV) system, and non-intrusive inspection (NII) system. The SLAN room shall have a minimum area of 120 sq. ft and requirements for HVAC, power, location, and adjacencies similar to the LAN room. This room will be constructed in compliance with the current CBP SPPH.

20.9.3 Site Backbone Distribution

Backbone connectivity shall be provided between the main point of entry (MPOE) of the facility and the LAN room. There shall be a minimum of two four-inch conduits from the MPOE to the LAN (one empty for future needs). A fiber backbone shall run from the LAN room to all IDFs within the CSA. Secure conduit shall be supplied for cabling that exits and then re-enters the CSA.

20.9.4 Intermediate Distribution Frame Room

An IDF room shall be provided whenever telecommunications circuit runs exceed 300 ft. The IDFs shall have a minimum area of 110 sq. ft and requirements for HVAC, location, and adjacencies similar to the LAN room. Each IDF shall have convenience outlets and dedicated power for installed equipment, as required. The need for power panels and plywood backboards shall be evaluated on a case-by-case basis. All equipment racks shall have lockable front and rear doors. For additional planning information related to these spaces, contractors should refer to Chapter 22, Room Data Sheets.

20.9.5 Horizontal Distribution

Overhead cable trays are the preferred distribution system within structures to allow for future expansion.

20.9.6 Conduits and Cables

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Conduits to inspection stations shall be a minimum of four inches in diameter for trunks and two inches for branches. Excess capacity shall be provided for future expansion.

Cabling shall provide redundant capacity. Cabling in public areas, violator areas, between buildings, and inspection areas shall be housed in conduit dedicated for CBP use only. Data lines, the LAN, and fiber optics cabling shall be Category 6-A shielded cable or other technologies as directed by OIT. Fiber cabling that exits and then re-enters the CSA shall be one continuous piece and shall be housed in a secure conduit. Inner ducts shall be provided inside communication ducts that hold fiber optic cables. Corrosion-resistant conduit is required for any exterior conduit. For conduit placed below grade, the conduit must be reinforced to avoid collapsing under the surface weights from vehicles. All conduits shall have at least two pull strings with labels for their corresponding use. Separate conduits are required for each use, including voice, data, power, alarm, security systems, and mechanical controls.

Building codes, industry standards, the individual length of run, voltage drop, and signal type should be considered when selecting cabling type. Other considerations shall include the existing infrastructure, system maintenance, system stability, and future system requirements.

Fiber optic cabling should be installed in accordance with industry standards, including the Fiber Optic Association (FOA) guidelines. Installed fiber should be tested using a time-domain reflectometer (OTDR) to ensure proper installation and performance quality. Fiber optic should be 62.5/125µm multimode cable or a hybrid cable containing both multimode and single mode, depending on transmission distance and number of devices. The number of strands to each node depends on the number of cameras and devices. Each node should have a minimum of 30% dark strands of fiber for future use. All fiber connectors shall be approved by OIT.

20.9.7 Security Systems Rack and Cabling

- A lockable rack with front and rear doors should be provided for the security system and shall be placed in a secure location (typically the SLAN or IDF room).
- All provided cabling shall be brought directly from the device to the secured rack location or secure fiber node.
- One data network drop and one power cable shall be provided for each camera.
- One data network drop, one power cable, and one shielded audio cable shall be provided for each camera and microphone combination.
- One shielded audio cable (see audio requirements) shall be provided for the microphone.
- Devices carrying video and data shall be manufactured by International Fiber Systems (IFS), or equivalent standards, and have a comprehensive warranty.
- All fiber optic cabling shall be installed and certified in accordance with industry standards.

20.9.8 Outlet Provisions

Communication cables and outlet locations shall be provided for large office and work areas. Each workstation shall have the capacity for a minimum of four pair UTP Category 6-A cable jacks. Podium/booths shall have the capability for two data lines: one for Office of Biometric Identity Management (OBIM) and one for CBP systems, plus spares for expansion options. A multiple use telephone line shall be provided. All communications and data outlets shall have protected identification/address labeling capability.
20.9.9 Accessible Ceilings and Floors

Requirements for distribution pathway systems and areas requiring accessible ceilings and floors shall be identified early in a project to ensure proper coordination. In general, ceiling distribution systems are preferred. Floor distribution systems may be considered, but shall not be used in secure areas.

20.9.10 Antenna or Radio Installations

The A/E should anticipate that roof-, tower-, or pole-mounted antennae will be required by CBP. Antenna mounting and location requirements shall be determined by the A/E as early in the design process as possible, preferably during the concept phase. Antenna requirements shall be coordinated with the OIT. If more than one antenna will be required, they should be grouped in one general location providing this configuration does not result in RF interference. Appropriately sized conduit shall be provided from each antenna location to the room in which the radio communications equipment is housed. The antennae shall be treated as an integral part of the visual design and not expeditiously tacked onto a building without consideration to the design intent. Antennae shall be shown on the design development building elevation drawings.
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CHAPTER 21 - PHYSICAL SECURITY

21.1 INTRODUCTION

This chapter is an overview of the standards and performance specifications for U.S. Customs and Border Protection (CBP) cargo facilities’ physical security in accordance with the CBP Security Policy and Procedures Handbook (SPPH).

The initial Facility Security Level (FSL) determination for access-controlled space will be made as soon as practical, after the identification of a space requirement, including succeeding leases. The FSL ranges from a Level I (lowest risk) to Level V (highest risk). The determination should be made early enough in the space acquisition process to allow for the implementation of required countermeasures, or reconsideration of the acquisition from the inability to meet minimum physical security requirements.

Risk assessments are conducted at least once every five years for Level I and II facilities and at least once every three years for Level III, IV, and V facilities. The FSL will be reviewed and adjusted, if necessary, as part of each initial and recurring risk assessment.

The responsibility for making the final FSL determination rests with the tenant(s) who must devise a risk management strategy and, if possible, fund the appropriate security countermeasures to mitigate the risk.

- For single-tenant facilities owned or leased by the government, a representative of the tenant agency will make the FSL determination in consultation with the owning or leasing department or agency and the Office Professional Responsibility (OPR) Security Management Division (SMD).
- In multi-tenant facilities owned or leased by the government, tenants (i.e., the Facility Security Committee (FSC)), will make the FSL determination, in consultation with the owning or leasing department or agency and the OPR SMD.

When OPR and the owner/leasing authority do not agree with the tenant agency representative or FSC about the FSL determination, the Interagency Security Committee (ISC), as the representative of the U.S. Department of Homeland Security (DHS), will facilitate the final determination through discussion with relevant parties. The ISC facilitation will begin after initiation through either a regional ISC representative or through direct communication with the ISC headquarters element. The FSL determination shall be documented, signed, and retained by all parties to the decision.

Physical security permits CBP to ensure that only authorized individuals are granted access to restricted areas, and that commercial goods enter the cargo facility in a sterile manner and remain so until fully processed.

These protection systems and strategies shall be incorporated into a comprehensive security plan. The plan shall be collaboratively developed by all stakeholders to include the equipment, procedures, maintenance, responsibilities, and other information associated with the CBP Physical Security Systems (PSS). Close coordination with OPR SMD is required to determine project-specific security and operational requirements that affect the PSS.
21.2 RESPONSIBILITIES

21.2.1 Office of Professional Responsibility

The OPR is responsible for the oversight, planning, development, evaluation, and management of the PSS. The OPR issues the policies and procedures pertaining to the PSS.

21.2.2 Security Management Division

The SMD, within OPR, has the responsibility to provide oversight for physical, information, industrial, and operations security programs for CBP. The mission of SMD is to promote and enhance officer safety by strengthening the protection of all CBP assets, including personnel, facilities, and information. The SMD's primary objective is to identify and reduce risks, threats, and vulnerabilities in the security of CBP personnel and assets. Issues related to abovementioned areas of security shall be directed to SMD.

21.3 PLANNING CONCEPTS

The following concepts shall be incorporated in the facility design:

- Ability to increase security: The cargo facility shall be capable of increasing security in response to a heightened threat. This includes expansion capacity in communications and electronics systems; the addition of electronic systems, illumination, security barriers, monitoring points and perimeter control, and facilities to support additional temporary staff; and the ability to suspend or shield operations in exposed areas of the facility.

- Comprehensive approach: The OPR evaluates a wide range of undesirable events outlined in the ISC/DHS Design Based Threat Matrix to identify where the cargo facility needs to focus mitigation efforts.

- Countermeasure implementation: CBP’s application of security criteria allows cost-effectiveness and other alternative design features by making risk-based decisions that mitigate all credible threats, vulnerabilities, and consequences. A countermeasure associated with mitigating these consequences shall not be excluded before all possible alternatives have been explored and a decision has been made by SMD.

- Blast mitigation: All federal facilities must meet minimum glazing requirements of performance condition 3b in accordance with ASTM F1642. For determination and applications deviating from the minimum glazing, all Level IV facilities, buildings higher than 3 stories analysis conducted by either a certified blast engineer or a structural engineer that specializes in blast protection solutions. Also, if the blast containment measures are proposed, a certification by a certified registered professional engineer that the equivalent mitigation capability is present is required.

- Bullet resistant: Walls and partitions exposed to the border, adjacent to inbound and outbound lanes, where CBP interacts with the public, and where public space adjoins to CBP space shall be bullet resistant. These walls and partitions shall extend from slab-to-slab and shall be bullet resistant to meet or exceed UL–752-95 Level 3 for bullet resistance and ASTM F1233 Class 3 Level III for forced entry resistance. When other CBP space is located behind CBP officers interacting with the public, such as a counter position, this bullet resistant wall/partition shall be at the point of public interaction (i.e. bullet resistant transaction window) or behind the officers to protect the other CBP space. If the bullet...
resistant partition/wall is placed behind the officer interacting with the public, then any structure (counter, podium, half wall, etc.) between the officer and the public shall also be bullet resistant.

- Shelters: The cargo facilities are not designed as Federal Emergency Management Agency (FEMA) fallout shelters nor are they designed to be a part of the U.S. National Defense System. The cargo facilities shall be designed to allow law enforcement to maintain control of the public and suspected criminals encountered during the inspection process.

21.4 ELECTRONIC SECURITY SYSTEM(S)

CBP electronic security systems (ESS) consist of an access control system (ACS), an alarm system comprising of intrusion and duress sensors, and a closed-circuit television (CCTV) system.

Any ESS that will use CBP network infrastructure must be approved by the Office of Information and Technology (OIT). All equipment and software must be listed in the OIT Technology Reference Manual (TRM) and be a part of a security authorized Federal Information Security Management Act (FISMA) system before the equipment is connected or used on the network. CBP Cyber Security Directorate will advise of system’s status or requirements during project planning.

Access to any ESS components by non-CBP personnel must be submitted in advance with a documented request to the port director (PD). CBP may allow the view and control of some of its cameras during non-operational hours.

21.4.1 Access Control System

The primary function of the ACS is to monitor and control access to secure doors within the facility. Current electronic monitoring and control systems are based on the supervised use of identifying badges with card and numeric keypad or biological identification technology. Remotely controlled electronic or magnetic locking devices, door status sensors, or other electronic devices allowing authorized access.

CBP areas requiring ACS may include, but are not be limited to:

- Processing areas.
- Arrival vestibules.
- Exit and perimeter doors.
- Sterile corridors.
- CBP operational support office and support spaces.

The ACS connects and manages door card readers and other related input/output devices. The ACS is used to monitor duress and tamper alarms, and state of key switches, by monitoring the change of state.

ACS must be able to:

- Provide access to designated areas by authorized CBP personnel.
- Deny access through controlled doors by unauthorized individuals.
- Monitor and record in real time the opening and closing of all perimeter doors located within the cargo facility.
- Configure and maintain monitored (alarmed) point tables, authorized user tables, and other databases.
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- Detect, alarm and tamper, or trouble conditions at all monitored points.
- Collect and process information from monitored points.
- Partition users in the ACS based on their access levels.
- Annunciate all alarm, tamper or trouble conditions, advisories, and control input errors.
- Maintain a time-stamped log of alarm, tamper or trouble conditions, advisories, and executed keyboard control functions.
- If systems integration is approved by OIT, CCTV cameras shall provide live view of cameras associated with designated alarm conditions.
- Display and print system status information on demand.
- Store all alarm, tamper or trouble conditions, advisories, executed keyboard control functions, and test results, and access this information.
- Maintain historical records, system programs, and database information.
- Display and print historical logs on demand.
- Communicate with selected remote locations.
- Perform system setup and provide background processing.

The ACS must also include identity management functionality to ensure issuance of visitors' ID cards and management of access rights. This functionality may be offered through a stand-alone identity management solution, which must be integrated with the ACS.

An interface with building fire alarm systems is also required to ensure that designated doors are unlocked when a fire alarm is activated.

Entry to the CBP perimeter shall be controlled by card reader/keypad requiring the presentation of valid identifying information authorized by CBP. Once the ACS has validated the identifying information, the door unlocks and the alarm is shunted for a predetermined, programmable period of time, allowing access to authorized persons. The PSS shall control selected doors providing access to CBP operational support areas. Doors, from the non-secure side of the facility or the processing floor, shall have card reader/keypad ingress and unrestricted egress.

A. Cargo Facility Perimeter

A cargo facility perimeter consists of all areas and land under CBP control which is free of unauthorized individuals, illegal contraband, or any undeclared items requiring declaration to CBP under published United States laws and regulations.

Secure perimeter doors capable of providing unauthorized entry to the secure area shall be controlled by card reader/keypad. Perimeter door hinges should not be exposed to unsecure areas or have removable hinge pins and latch guards. Cargo facilities using biometrics to authorize entry to secure doors will also be considered by CBP. The CBP shall manage access rights for individuals and control access to sterile areas. The ACS can immediately revoke an individual’s access to the sterile area.

B. CBP Office Area

The perimeter of a CBP office area is defined as the walls that separate the public and operational support spaces from other areas of the processing facility and/or the non-secure side of the facility.
Doors providing access to the CBP office area from the processing facility or the non-secure side of the facility shall have a two-factor approved product list (APL) card reader for ingress and unrestricted egress as defined in this chapter. In addition to the APL card reader, doors entering the office area from a non-secure side of the facility shall have tamper-proof hardware and be equipped with a high security lockset and cylinder that meets or exceeds Underwriters Laboratories (UL) 437. Interior office doors, except for the local area network (LAN)/SLAN>IDF rooms and other secure room(s), will have standard locksets keyed individually and keyed to a CBP master key. CBP locks will not be keyed to the host facility's master key. CBP shall furnish emergency access keys to authorities as required.

C. Emergency Exits

CBP perimeter exits providing emergency egress to non-CBP personnel in the cargo facility that are breached shall generate a local audible/visual alarm at the door and other designated locations, as required. Engaging a door bar for more than two seconds shall set off an alarm and, if systems integration is approved by OIT, activate the associated CCTV camera. Emergency exits should be equipped with special locking devices, approved by the National Fire Prevention Association (NFPA), that provide opening delays of 15-30 seconds.

At small facilities, some emergency exits located in the immediate vicinity of the CBP officer work area may only require a local audible/visual alarm. The CBP grants this exception on a case-by-case basis.

D. Door Status Monitoring

The ESS controls access and monitors the cargo facility perimeter. The open or closed status of all perimeter doors shall be monitored and recorded in real time. Unauthorized opening and doors left opened for extended periods of time, shall initiate an alarm and, if systems integration is approved by OIT, activate the associated CCTV camera. This allows an operator to assess the breach and direct an appropriate response. Authorized access requires that the door identification, time of access, and identity of user be logged to a history file. The CBP shall provide a local audible/visual alarm at any perimeter door designated as an emergency exit.

Non-Operational Doors

Non-operational doors, primarily emergency exits, do not require card reader/keypad control except for selected doors providing authorized access to operational areas. When an emergency exit door hardware is activated, a local audible/visual alarm and an alarm event shall be generated. If permitted by local codes, CBP prefers that emergency exits incorporate delayed egress where possible. The unlock delay must be coordinated with CBP. Local alarms can only be silenced by a valid card swipe and disabled by officers or the Megacenter if the cargo facility is closed for operations.

Operational Doors

Controlled operational doors require card reader/keypad access to authorized persons without initiating an alarm unless the door is forced open or remains open beyond the programmed access time. To the extent allowed by local codes, security locking mechanisms must have fail-secure configurations.
21.4.2 Alarm Monitoring System

Alarms generated within the CBP secure perimeter and duress alarms are annunciated at CBP-designated locations officers shall be able to:

- Acknowledge and process CBP door alarms to determine an appropriate response and to acknowledge and disable the alarm when the area has been secured.
- View and record the output from any CCTV camera associated with an alarm, if systems integration is approved by OIT.
- Place an alarm point in bypass mode to silence repeated alarms resulting from testing or equipment failure.

21.4.3 Intrusion Detection System

An intrusion detection system (IDS) is required to identify unauthorized access to specific areas within the CBP facility. Motion sensors must employ dual technology detectors (with passive infrared [PIR] being one of the devices), microwave sensors are not permitted. The system, at a minimum, shall have PIR volumetric sensors, high security door position switches, and glass break sensors (where applicable). An uninterruptable power supply (UPS), emergency backup, and an alternative method of communication with the monitoring station (wireless phone link or additional analog/digital telephone line) are required. The IDS and components shall be UL 639 compliant, unless designated by OPR SMD. A keypad disable control shall be located inside the room by the entry door. The system shall be monitored on a 24-hour basis by CBP or by the Megacenter, if this facility is not staffed full-time.

21.4.4 Intercommunication Subsystem

The intercommunication subsystem (ICS) provides two-way communications between CBP supervisors and personnel in primary inspection booths and secondary inspection areas and allows operators to communicate with officers or clearly assess a problem and provide appropriate assistance. Remote units at access control points should have pushbuttons to operate in a hands-free mode.

Intercom units shall be tamperproof and of industrial quality. The address of CBP master stations, to which remote units are automatically connected, should be locally programmable to allow for future changes. CBP master stations shall be able to originate a call to any remote station, receive and queue up calls from remote stations, and forward calls to the Megacenter when the facility is closed.

21.4.5 Call and Duress Alarm Annunciation

A. Call Monitoring

Each primary processing podium/booth, the secondary processing areas, and the secondary workstations are equipped with a communications system for officers to request assistance from designated location(s). The communication system may be a telephone or a multi-zone intercom system.

B. Duress Alarms

Duress alarms generate a separate and distinct audible/visual alarm in CBP designated location(s). CBP shall have the ability to monitor and manage these alarms.
Duress alarm (audible/visual): Used to generate an alarm locally. This alarm has one function which is to alert the immediate area and the monitoring center that assistance is needed.

Duress alarm (silent): Used to generate an alert sent to the monitoring station without sounding a loud siren at the source of the alarm and notify of a potential emergency, or request assistance.

21.4.6 Closed Circuit Television System

The CCTV system is designed to perform two functions: assessment and surveillance of the cargo facility. Assessment cameras are used by CBP to conduct immediate visual assessments of threats posed by alarm events. Surveillance cameras are used by CBP to monitor activity both inside and outside the facility. CBP employs surveillance cameras at cargo facilities to monitor arriving commercial goods. All cargo facility access points must be equipped with CCTV cameras to ensure complete and continuous CCTV surveillance coverage.

At certain facilities, CBP officials may require additional cameras not listed in this section. CBP must be consulted during the CCTV system planning. All camera views shall be continuously recorded to include alarm recording. It is necessary to position both assessment and surveillance cameras to view the faces and/or activity of approaching visitors.

Several CBP operational support rooms generally within the CBP operational support space require fixed camera coverage (preferably with wide angle lens capability). The following are some of the rooms within CBP operational support space: public reception/lobby, weapons storage, secure storage, temporary seized property, the LAN, and other strong rooms designated by the SMD. All camera views, except for views generated by cameras in the secondary processing areas, are displayed at the security workstations using the CCTV control window, manual controls or by selecting the appropriate icon on one of the graphic displays.

Camera views are monitored at a designated location determined by local CBP management and OPR SMD security specialists.

A. Assessment Cameras

Assessment cameras are located at all cargo facility access points and are the primary tool for evaluating a breach prior to dispatching response personnel. Cameras, wherever possible, are located on the egress sides of doors and in certain cases, CBP may also require cameras on the ingress sides. When a door activation bar is depressed for more than two seconds, the associated camera must activate if systems integration is approved by OIT. All alarm assessment camera outputs are automatically recorded.

B. Surveillance Cameras

Surveillance cameras allow officers to track the movement of cargo from the primary and secondary processing areas and initiate an appropriate response to any potential problem. The processing areas shall have 100% continuous CCTV coverage with multiple views. A mix of fixed and pan, tilt, zoom (PTZ) cameras must be used to provide complete CCTV coverage.

Surveillance cameras, generally PTZ, in the secondary area permit officers to view activity and address any concerns. Fixed cameras are required to monitor cargo, where secondary cameras do not adequately cover this area. One or more PTZ cameras is required in the general public lobby (governed by size of lobby). The
CCTV cameras are necessary to monitor public escalators and elevators and any routes that travelers who require Architectural Barriers Act Accessibility Standard (ABAAS) standards may travel.

All camera views should be viewable from any security workstation if the user has the correct permissions.

Exterior PTZ cameras are required by CBP to provide surveillance of the routes traveled by trucks and cargo between the border and the cargo facility. To ensure unobstructed views, cameras should be mounted at 14’-6” height. Rooftop cameras shall monitor all ground routes traveled by trucks and cargo approaching, moving within, and exiting the cargo facility.

C. Integrity Cameras and Microphones

Dedicated integrity cameras with audio/visual recording capabilities are required to monitor and record officer-traveler interaction in addition to general surveillance cameras. These cameras shall be installed and used at locations where officer-traveler interaction take place. While cameras with built-in microphones are acceptable, ceiling-mounted cameras with built-in microphones are impractical due to the inability of the system to clearly capture interactions. The integrity camera shall include a clear view of the interaction between the officer and the traveler. The CBP preferred viewing angles are over-the-shoulder view from behind and to the side of the officer (to capture the officer’s profile) or a profile view including both the traveler and officer. When using a ceiling mounted camera, an appropriate lens shall be considered, and a separate microphone placed closer to the interaction shall be provided. Similarly, installing a camera with a built-in microphone in the podium/booth is not desirable. The camera and microphone shall be installed where neither the equipment nor the recording are prone to interference or tampering.

21.4.7 Public Address System

The CBP shall have a public address/paging master station that allows officers to transmit messages to various zones within the cargo facility. The required zones include CBP primary and secondary processing areas and operational support spaces. Public address zones in processing areas convey important messages and/or instructions to the general public, if necessary. The system should be capable of broadcasting brief recorded messages to a single person or to the entire cargo facility.

21.5 SYSTEM DESIGN FEATURES

The following security features shall be incorporated into the individual facility security design. Existing conditions, site constraints, or specific operational mandates may affect the extent of these individual features.

- Access points to the roadways and parking areas of the facility shall be clearly identified by signage, with restrictions for access clearly stated. All vehicle areas, including visitor and staff parking and service docks, shall be provided with appropriate site lighting, access control, and video surveillance capability.
- Violator and seizure areas shall not be located where the public can observe them. Seizure vaults shall not be located on exterior walls.
- Discrete building zones shall be used to separate inspection areas, violator areas, office areas, waiting areas, counter areas, and staff support areas. Separation shall be provided between vertical circulation, the public lobby, and the inspection areas. No places of concealment shall exist within the cargo facility accessible by the public, including under stairs, behind columns, or within other areas of the building.
1. Inspection areas shall not have spaces where individuals can conceal contraband or weapons.
2. Roof access shall be through pathways restricted to staff only.
3. Air intakes shall be placed on roof areas or above the first-floor level.
4. Public toilets shall be placed where staff can observe entrances, respond to incidents, and control access.
   Toilets ideally should be located at the entrance to the primary processing area. Toilets should not be located adjacent to entrances/exits to/from access-controlled CBP spaces.
5. The following components should be not located near the inspection and public lobby areas:
   - Emergency generator, including fuel systems and day tank.
   - Fuel storage.
   - Main switchgear.
   - Critical distribution feeders for emergency power.
   - Telephone distribution and main switchgear.
   - Fire pumps, including fire sprinkler system and water supply.
   - Building control centers.
   - The UPS systems that control critical functions.
   - Main refrigeration systems that are critical to building operation.
   - Elevator machinery and controls.
   - Shafts for stairs, elevators, and utilities.
6. The building perimeter and doors between inspection areas and staff-restricted areas shall be designed to protect against forced entry. Facilities shall separate public inspection areas from staff entrances.
7. The security system shall include high security switch Level 2 (HSS-2) or balanced magnetic reed switches, glass break sensors, balanced magnetic contact switch sets, a CCTV monitoring station, a color CCTV system, and a duress alarm. The access system for facilities shall be designed in compliance with the Federal Information Processing Standard (FIPS) 201 Personal Identity Verification (PIV) for Federal Employees and Contractors. Homeland Security Presidential Directive (HSPD)-12 requires federal facilities to have secure personal electronic identification access control. These systems may include card readers as well as biometric readers. Cardkey access systems or similar personal identification verification systems shall be provided on all perimeter doors and doors leading from public areas to staff-restricted areas.
8. Positive air pressure shall be maintained in office areas, relative to other areas. Violator and seized-storage areas shall be maintained at negative air pressure, relative to other areas.
9. Cellular backup should be provided for security, except where cellular service is unavailable.
10. The facilities require a technology infrastructure, including a data communications room and a telecommunications room, which shall be planned for a minimum of 50% additional capacity.

21.6 PRODUCT REQUIREMENTS

All security system component and equipment requirements in this chapter are the minimum baseline requirements of the current state of technology. These requirements shall not preclude the use of any new hardware and technologies that may be available at the time the facility program is implemented. Systems must be interoperable. Products and technologies must be reviewed and approved by OPR SMD and the Field Operations Facilities Program Management Office Project Manager (FOF PMO PM) prior to being included in the design.
All products shall be industrial quality, detention grade, or vandal-resistant based on location of installation. Products shall have proven functional design and supported by documented performance data collected from similar applications in continuous operation for a minimum of five years. Wiring to individual components shall be supervised by CBP-authorized personnel during installation. Any installation that could potentially be accessed by unauthorized persons shall be tamper-protected by a CBP-approved method. Components shall meet or exceed the industry standard for similar equipment meeting the same functional performance standards. The CBP is responsible for system maintenance.

21.6.1 Access Control System

The ACS is an essential part of ESS. It controls, monitors, reports, and records all valid and invalid entry attempts by personnel using access cards at card reader terminals. It initiates alarms from designated alarm points at duress button locations and monitoring stations.

The ACS typically uses either multi-door or single-door field panels that manage local access control decisions and report the change of state of monitoring switches, such as door position contacts or pushbuttons to system headend. It is preferred that the ACS field panels be internet protocol (IP) addressable and capable of running on a secure LAN within the facility. The intent of the distributed system configuration is that, in the event of communication loss between the field panel and the host headend server, the field panel will continue to operate and control access of the associated doors while archiving the transactions locally. Once communications are restored, the archived data is uploaded to the system management server.

The application software must be an interoperable system with open architecture type. The system shall be capable of supporting various manufacturers’ field panels and field devices. It shall have the ability to be integrated with other core systems, such as the CCTV, IDS, building automation, and lighting controls.

The ACS will comply with HSPD-12, FIPS 201-2 policies, Government Smart Card Interoperability Specification (GSC-IS V2.1) and Schedule 70 for Products and Service Components. Security equipment installed in CBP facilities and that use CBP network infrastructure must be approved by OIT and listed in the TRM before the equipment is connected to or used on the network.

The ACS shall be selected from the GSA APL, provides federal agencies with products and services that have been approved for Federal Identity, Credential, and Access Management Architecture (FICAM) implementation based on rigorous security vulnerability and interoperability testing performed by the FIPS 201 Evaluation Program.

The ACS must support at least 1,000 credentialed users initially, with scalability to at least 5,000.

The end device products below are listed as preferred products for access control system applications. The actual products are evaluated by CBP during the design submittals review process. Contractors should refer to Chapter 22, Room Data Sheets, for applicability of each device. Security door hardware with hardware sets are identified in Chapter 14, Architecture.

High Security Switch

All doors that make up and/or are a part of the cargo facility perimeter boundaries and those doors that lead to high security spaces, as indicated on room data sheets, shall be monitored by a UL 634 HSS-2.
Door Position Switches

Recessed door position switches shall be used for doors not requiring HSS-2. Surface-mounted door position switches are not preferred, but may be considered for existing doors where retrofitting of recessed switches may not be feasible.

Electronic Door Hardware

To the extent allowed by local codes, all electronic door locking hardware must be in fail-secure configuration. Fail safe devices, such as magnetic locks, may be considered on the exceptional basis, if no other feasible options exist. This hardware should incorporate request-to-exit (REX) functionality to avoid installation of additional hardware, such as pushbuttons and PIR sensors.

Passive Infrared Request-to-Exit Sensors

The PIR sensors are used to temporarily shunt door alarms, and in some cases, open doors.

Request-to-Exit Pushbuttons

The REX buttons are used to shunt door alarms temporarily, and to unlock doors by cutting power to locking hardware for emergency egress doors. This functionality must be achieved by built-in features on locking mechanisms, such as electrified mortise locks and panic hardware.

Request-to-Exit Door Hardware

Electrified cylindrical locksets are designed for the access control of openings in facilities where code compliance, dependable operation, and resistance to physical abuse are required. Turning the inside lever for egress activates the built-in REX output providing a momentary signal to the access control REX input for alarm shunt during egress.

Audible/Visual Alarm Annunciators

Local audible/visual alarm units with integrated horns/strobes must be provided as required. For interior applications, audible/visual alarm units must not exceed 82 dB rating. For exterior use, these units must be limited to 102 dB. Audible patterns must be user-selectable to differentiate from other alarm types, such as fire alarms.

Delayed Egress Hardware

All cargo facility perimeter doors designated as emergency egress must be equipped by audible alarms, time-delayed egress hardware with adjustable delay times up to 30 seconds. These doors must interface with the building fire alarm system to be released upon fire alarm activation.

Card Readers

All card readers used in the cargo facilities must provide two-factor authentication – a combination of a valid card reader, personal identification number (PIN), or biometrics. Card readers shall be capable of supporting
current FIPS 201 PIV card configurations. It is not the intent to have dual technology enabled on all CBP doors at all times, but this PIN or biometric functionality may be enabled for elevated threat levels.

Wire Transfer

Where doors are equipped by electronically controlled hardware, such as locks and exit devices, a wire transfer must be provided to allow a wiring path from the door frame to the device installed on the latch side of the door. Devices must be concealed when the door is in the closed position, allowing no access to wires or wires that are visible/exposed.

21.6.2 Closed Circuit Television System

The CCTV system is another subsystem of the ESS. An IP-based system consists of a combination of fixed and PTZ cameras, processing servers running management software, network switches, network-based recording devices, and monitoring stations. The system may include video encoders to connect legacy analog cameras.

Digital IP color video cameras are required for all applications and shall meet the technical requirements described below. They must include integrated encoders providing a Transmission Control Protocol (TCP/IP format output via a standard RJ-45 Ethernet jack. Camera resolution must be selected based on deployment application. Analog color video cameras should only be used to replace existing analog components. Minimum analog camera resolution must be 1080p.

Digital IP CCTV cameras shall meet or exceed the following specifications:

- 3-megapixel minimum resolution.
- Varifocal, IR corrected CS mount lens for fixed cameras and motorized zoom for PTZ.
- Day and night capable.
- Minimum illumination of 0.2 lux in color mode and 0.05 lux in black and white mode for outdoor cameras.
- H.265 compression algorithm.
- Frame rate up to 30 fps minimum.
- Minimum of 2 independent, individually configurable video streams.
- Wide dynamic range (WDR) capable.
- Video motion detection.
- Power over Ethernet (PoE) Institute of Electrical and Electronics Engineers (IEEE) 802.3af.
- 360° pan and 180° zoom for PTZ cameras.
- Operating temperature range of at least -20°C to 50°C (-4°F to 122°F) or more to meet local conditions.
- Various mounting accessories: Wall, ceiling, surface, pendant, corner, roof/parapet, etc.
21.6.3 Network Video Recorder

- CBP must be consulted before selecting equipment/systems.
- Network video recorder (NVR) shall be located in the SLAN room in a lockable rack with front and rear doors.
- Audio and video capture shall be stored on NVR for a minimum of 30 days.
- Power, 120 or 240VAC as applicable, shall be provided.
- Contractor shall incorporate video motion detection and tampering alarms.

21.6.4 Identity Management System

An identity management/badging system is required to manage access rights for card holders within the facility and create new ID cards for visitors and/or maintenance personnel. The system shall support FIPS 201, entitled PIV. Badging software provided for badging workstation shall support FIPS 201 PIV card configuration. Badging application shall be handling foreign FIPS-201 cards for the purposes of verification and adding access rights as needed.

Visitor management functionality of the badging system must include:

- Ability to issue plastic card photo ID with image storage within the visitor management system.
- Ability to issue temporary pass with time-expiring ink without photo.
- Electronic log with data captured from valid issued ID to populate specified fields within software (ID verified by guard or law enforcement personnel).
- Ability to use PIV/PIV credentials from any issuer, according to host country’s facility security policy.
- Ability to issue Commercial Identity Verification credentials to visitors for electronic access per host country’s site policies and requirements.

The badging printer must be capable of encoding and printing text and pictures directly on standard International Standard for Organization (ISO) smart cards. The layout of smart cards may include elements specific to the facility, for example the cargo facility logo and emergency contact information.

The badging workspace must include an enrollment camera to capture a photo of enrolling individuals, backdrop, signature pad, biometric scanner, and verification card reader to test newly printed badges.

21.7 COMMAND AND CONTROL CONSOLE

Security workstations shall have text and interoperable graphic displays, high resolution color monitors for assessment and surveillance cameras CCTV control keyboard, printer for reports and logs, and a master intercom station.

The number of required devices depends on the size of the facility, the amount of cargo processed, and level of redundancy necessary to ensure continuous operation. Redundant security workstations allow multiple operators to handle the workload generated during peak traffic periods and continuous operation in the event of equipment failure.
21.7.1 Security Workstations

Security workstations permit CBP officers to monitor the processing areas, acknowledge alarms, and provide appropriate response. Security workstations shall be configured based on CBP requirements.

Each workstation shall have controls and display multiple text and graphic windows containing the following information:

- The CCTV controls that can view, record, playback, and archive video from any CCTV camera.
- Audio recording from select cameras.
- The PTZ camera controls.
- Camera motion detection alarm capability.
- Alarm controls permitting an operator to acknowledge, process, and release alarm events, place alarm points in bypass mode, or transfer responsibility to another workstation. Alarms requiring continuous monitoring shall be transferable to a CBP-approved monitoring location when the facility is closed.
- Remote unlocking doors.
- Alarm disabling feature.
- Recorded video exporting.
- Adjustable door shunt time to extend the time the select doors can be held open without generating alarms.
- Facility threat level adjustments and secondary authentication technology on select card readers (PIN/biometrics).
- Query controls allowing an operator to generate and print reports from the access control/alarm database or history logs.
- Color-coded graphic representations of processing areas indicating triggered alarm points.
- Color-coded text descriptions of active alarm events, listed in priority order, and any associated instructions and operator comments.
- Color-coded maps of relevant areas that are being monitored, suitably scaled, with selectable icons indicating the location of alarm points and CCTV cameras.
- If systems integration is not approved by OIT, separate security workstations for ACS and CCTV shall be provided.

21.7.2 Video Equipment

Security workstations shall have a minimum of four (4), 40” (minimum), high resolution video monitors. At least one shall have grid view capability that allows simultaneous viewing of assessment and surveillance cameras. The exact number of monitors depends on the size of the cargo facility and required level of redundancy. The position and method of mounting security workstation monitors shall not create an obstruction for viewing the cargo processing areas.

Security workstations shall include a manual control for every two monitors allowing an alternative method of switching camera views to a designated monitor, setting up or initiating sequencing operations, and controlling the PTZ and focus.
21.7.3 Other Console Equipment

One or more master intercom stations that allow workstation operators direct voice communication with remote access points, processing booths, secondary workstations, and port security shall be provided. Each master station should have a keypad and a visual display that indicates the number called or the number of the calling station and additional calls in the queue.

A minimum of one network printer should be provided to allow officers to print reports, ad hoc query results, and portions of active history logs. Security workstation operators should be able to schedule printing longer reports and extensive database queries during off-peak hours.

There shall be a dedicated red color visual annunciator provided in the general work area for duress alarms. This light must be provided in addition to on-screen annunciation of alarms.

21.8 SYSTEM PERFORMANCE

The CBP defines the performance criteria for the PSS in terms of system availability, initial capacity, growth, response time for various events, principals of ergonomic design, and ease of use.

21.8.1 Availability

The system shall be designed to operate 24 hours a day, 7 days a week. All critical components identified and provided by CBP shall have a UPS connected to an emergency generator. In addition, headend as well as field panels and door hardware power supplies shall have a minimum of 90 minutes of battery backup. The cargo facility is required to provide spares for the system’s replaceable components to minimize downtime.

21.8.2 Capacity and Growth

Capacity requirements for each system vary depending on the size of the CBP facility and the projected number of authorized users. Adequate capacity and growth potential, without redesign, must be provided in the following categories:

- Database sized for authorized users.
- Number of independently controlled security areas.
- Number of time zones.
- Maximum number of security workstations.
- Maximum number of identification devices.
- Maximum number of monitoring points.
- Maximum number of remote intercom units.
- Maximum number of CCTV cameras.
- Size of central, on-line historical event data storage.

The capacity of the system should be a minimum of 150% of identified requirements and be scalable to 100% expansion over initial capacity. System design should provide for the addition of subsystem equipment by inserting the appropriate interfaces and performing minor parameter modifications in the software.
21.8.3 Response Time

The system shall be capable of meeting established industry standards for ACS and the following response times:

- Changes in the status of any monitored point (alarm, tampering, trouble condition, etc.) shall be reported within one second.
- When multiple events occur before the first condition is annunciated, subsequent events shall be annunciated at intervals not exceeding one second each.
- With a local database of 10,000 authorized users or less, the PSS shall be capable of processing access requests at secure doors within one second. No automated, controlled-access function shall delay the reporting of a change in the status of a monitored door more than one second.
- The system response to a valid operator control request shall be initiated and visually acknowledged within two seconds. The system shall also advise the operator when a task is complete.
- The system response time to a valid operator request for graphic displays should be within two seconds, but not more than five seconds.
- When requested by an operator, historical log printouts shall begin printing within five seconds.

21.8.4 Ergonomic Design and Ease of Use

The PSS shall incorporate typical ergonomic features that enhance ease of use. These features include windowed formats, graphic input/output, selected buttons and icons, color-coding, blinking, shading, etc. The goal is to provide a basic and intuitive system for officers.

An integrated solution, where a single graphical user interface allows seamless interaction with the ACS and CCTV systems, is strongly preferred. This integrated graphical user interface must provide facility maps with all PSS cameras, access-controlled doors, and alarm points, such as duress buttons, and be intuitive for the operator. The advantage of this integrated solution is that the operator needs to learn a single interface to operate all PSS components.

The contractor will provide officers with adequate training in system operations immediately after it has been placed in operation and prior to the initial opening date of the new or renovated cargo facility.

21.8.5 Physical Security Construction

All processing area walls shall be constructed of solid materials to prevent members of the public and unauthorized employees from observing CBP operations. Physical contact between cargo and other persons not authorized to access to these areas is strictly prohibited. Lay-in acoustical tile ceilings in gate vestibules are permitted when a clear ceiling height of 9’ can be maintained throughout the area. When this height cannot be achieved, contractors shall provide a solid (monolithic) ceiling.

Public toilets within the cargo facility perimeter shall have solid ceilings. Lay-in acoustical tile is not permitted. Janitorial closets adjacent to public toilets shall be lockable and accessible with the CBP master key. Maintenance access panels shall also be lockable or require special tools for removal.
All cargo facility perimeter walls shall be built from finish floor to underside of deck above (slab-to-slab) allowing officers to easily identify break-in attempts. Walls within the operational support area shall be built floor to ceiling and lay-in acoustic tile ceilings are generally acceptable, except for rooms that require additional security.
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CHAPTER 22 - ROOM DATA SHEETS

22.1 INTRODUCTION

The following pages provide specific requirements for each type of room, space, or structure that may be used within cargo facilities.

22.2 ORGANIZATION

The room data sheets are organized into the following categories and sub-categories of rooms:

1.0 INSPECTION SUPPORT SPACES
2.0 OPERATIONAL SUPPORT SPACES
3.0 STAFF SUPPORT SPACES
4.0 BUILDING SUPPORT SPACES

22.3 ROOM DATA SHEET GENERAL NOTES

The following notes are applicable to all room data sheets:

Construction: Where rooms with different security levels adjoin, the common wall construction shall meet the most stringent security requirements, such as reinforced concrete masonry unit (CMU).

Dimensions: Where noted, dimensions are recommended minimums clear to finished walls.

Window and doorways: The placements presented in the drawings are suggestions. Actual window and doorway placements may vary.

Furniture: Furniture sizes and layouts presented in the drawings are suggestions. Actual furniture sizes and layouts will be determined by U.S. Customs and Border Protection (CBP). Furniture selections should be coordinated within budget constraints.

Security: Security devices in drawings are shown diagrammatically and do not represent device types, locations, and mounting methods. Specific requirements shall be coordinated with CBP during the design phase. Refer to the most current edition of the CBP Security Policy and Procedures Handbook (SPPH) for more information.

Utility features: The utility features presented in the drawings are suggestions. Actual features may vary based upon site-specific design.

Number of operational support spaces: Determination for the actual number of operational support spaces in terms of offices and workstations will be in accordance to the programs of requirements (POR) for each project.
This page is left intentionally blank.
Secondary Inspection Area

This area includes storage capability for enforcement tools and other necessary equipment and technology. Adjacent to the Examination and Physical Inspection Area.

**1.0 INSPECTION SUPPORT SPACES**

**DIV 08 - DOORS AND WINDOWS**

<table>
<thead>
<tr>
<th>Door Type</th>
<th>B-B-01  Hollow Metal, Full flush, seamless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Frame</td>
<td>HM-1  Interior, 12 gauge hollow metal, fully welded</td>
</tr>
<tr>
<td>Cylinder/Group</td>
<td>C - Cylindrical Lever Lockset - Storeroom Function</td>
</tr>
<tr>
<td>Door Hardware</td>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
</tr>
<tr>
<td>Group</td>
<td>J - Non-Removable Hinges (outswing), K - Automatic Door Closer</td>
</tr>
<tr>
<td>Interior Window</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Windows</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**DIV 09 - CONSTRUCTION AND FINISHES**

<table>
<thead>
<tr>
<th>Acoustic Separation</th>
<th>STC 45: Minimum sound isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor Finish</td>
<td>FF-03  Concrete, troweled, uniform texture and appearance, sealed</td>
</tr>
<tr>
<td>Base</td>
<td>BF-01  Rubber Base, 4&quot; H</td>
</tr>
<tr>
<td>Wall Construction</td>
<td>Wall-02  Gypsum Board on Metal Stud, Sound Insulation</td>
</tr>
<tr>
<td>Wall Finish</td>
<td>WF-13: Paint, Semi-gloss</td>
</tr>
<tr>
<td>Ceiling Const. / Finish</td>
<td>CF-03: Acoustic Ceiling Tile, Suspended</td>
</tr>
<tr>
<td>Ceiling Remark</td>
<td></td>
</tr>
<tr>
<td>Ceiling Height</td>
<td>9’ min</td>
</tr>
<tr>
<td>Alternate Construction</td>
<td></td>
</tr>
</tbody>
</table>

**DIV 10 - FIXED EQUIPMENT**

<table>
<thead>
<tr>
<th>Fixed Equipment 1</th>
<th>Ergonomic Table, Mar-resistant, 60&quot;L x 30&quot;W x 32&quot; - 42&quot; H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Equipment 2</td>
<td>Metal Shelving, Heavy Duty, 5 shelf, 18&quot; x 36&quot; x 85&quot;H</td>
</tr>
<tr>
<td>Fixed Equipment 3</td>
<td>Drill press, one or more 4’ x 10’ work benches, two tool cabinets, vise, down-draft table</td>
</tr>
</tbody>
</table>

**DIV 21 - FIRE SUPPRESSION**

<table>
<thead>
<tr>
<th>Fire Special Requirements</th>
<th>SPKLR-01 Pendant</th>
</tr>
</thead>
</table>

**DIV 22 - PLUMBING**

<table>
<thead>
<tr>
<th>Fixtures and Fittings 1:</th>
<th>EEW-1: Emergency Eye/Face Wash - Wall Mount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixtures and Fittings 2:</td>
<td>FD-1: Floor Drains - Finished Area</td>
</tr>
<tr>
<td>Fixtures and Fittings 3:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 4:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 5:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 6:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 7:</td>
<td></td>
</tr>
</tbody>
</table>

**DIV 23 - MECHANICAL**

<table>
<thead>
<tr>
<th>Supply Register:</th>
<th>S-2: Square Ceiling Diffuser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return Register:</td>
<td>RR-2: Return Grille</td>
</tr>
<tr>
<td>Temp Summer</td>
<td>75° (max)</td>
</tr>
<tr>
<td>Temp Winter</td>
<td>72° (min)</td>
</tr>
<tr>
<td>Temp Control</td>
<td></td>
</tr>
<tr>
<td>Humidity Range</td>
<td>30% to 60%</td>
</tr>
<tr>
<td>Special Security</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**DIV 26 - ELECTRICAL**

<table>
<thead>
<tr>
<th>Electrical Receptacles:</th>
<th>R-1: Receptacle, Standard duplex, all walls, spaced at 10 - 0” max Oc, min 1 / wall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Electrical Receptacles:</td>
<td>All receptacles are GFCI.</td>
</tr>
</tbody>
</table>

**DIV 26 - LIGHTING**

<table>
<thead>
<tr>
<th>Lighting Fixtures:</th>
<th>L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting Control:</td>
<td>LC-1: Light Switch, located outside of room</td>
</tr>
<tr>
<td>Lighting Special:</td>
<td>Illumination of 70 ft.-candles minimum at the work surfaces without shadow or glare</td>
</tr>
</tbody>
</table>

**CFDS – 2019 – ROOM DATA SHEETS**

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### Div 10 - Furnishings and Equipment

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Adjustable Task Stool(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td>Anti-Fatigue Mat(s)</td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td>Phone Outlets: Phone 01 Single RJ-45 phone port</td>
</tr>
</tbody>
</table>

### Div 27 - Communications

- **Phone Outlets:** Phone 01 Single RJ-45 phone port
- **Data Outlets:** Data 02: Dual data port

### Div 28 - Security

- **CCTV Camera:** Fixed CCTV wide-angle lens camera, monitored at CCC.
- **IDS:** N/A
- **Access Control:** Two factor, APL-listed card reader, DPS
- **Duress System:** Mushroom Duress button, wall mounted

### Other Requirements

- **Phone Outlets:** Phone 01 Single RJ-45 phone port
- **Data Outlets:** Data 02: Dual data port
- **Communications Special Requirements:**

### Schematic Plan - Secondary Inspection Area

- **Camera**
- **Work Bench 4'-0" X 10'-0"**
- **Vice**
- **Tool Cabinet**
- **Drill Press**
- **Down-Draft Table**
- **Ergonomic Work Tables 32" -40" High**
- **Duress Push Button**
- **Card Reader / Keypad**
- **Egress Push Button**
- **Eye Wash and Emerg. Shower**

*Location of Integrity Camera(s) and Microphone(s) to be Approved by CBP. Refer to Chapter 21.*

**Secondary Inspection Area**

**CRG-01-01**

---

**NOT TO SCALE**

For Reference Purposes Only
**1.0 INSPECTION SUPPORT SPACES**

**DIV 08 - DOORS AND WINDOWS**

*Door Type:* B-B-01 Hollow Metal, Full flush, seamless

*Door Frame:* HM-1 Interior, 12 gauge hollow metal, fully welded

*Door Lockset Group:* N Electrified Mortise Lock with Lever set and built-in REX function & key override

*Door Hardware Cylinder:* A-1: Cylinder, keyed individually under a CBP Master

*Door Hardware Group:* K Automatic Door Closer, X Power Transfer Hinge

*Interior Window:* N/A

*Exterior Windows:*


**DIV 09 - CONSTRUCTION AND FINISHES**

*Acoustic Separation:* STC 45: Minimum sound isolation

*Floor Finish:* FF-10 Concrete, w/ seamless epoxy-resin non-slip flooring system, slope to floor drain

*Base:* BF-04 Integral with seamless flooring, 8” H

*Wall Construction:* Wall-02 Gypsum Board on Metal Stud, Sound Insulation

*Wall Finish:* WF-04: Gypsum Board, 5/8” Moisture Resistant, Painted

*Ceiling Const. / Finish:* CF-07 Gypsum Board, 5/8” Moisture Resistant, Painted

*Ceiling Remark:* Acoustical tile not permitted.

*Ceiling Height:* 9’ min

*Alternate Construction:* Wall: Ceramic tile

*Const Special Requirements:* Wall finishes must be washable. Flooring to be chemical resistant.

**DIV 10 - FIXED EQUIPMENT**

*Fixed Equipment 1:* Stainless Steel Counters/Backsplash, Stainless Steel Open Wall Shelving

*Fixed Equipment 2:* Chemical Storage Cabinet, non-vented, Fume Hood with dedicated exhaust & HEPA filters

*Fixed Equipment 3:* Cabinets above and below counters, Stainless Steel Table (optional)

**DIV 21 - FIRE SUPPRESSION**

*Sprinkler Head Type:* SPKLR-01 Pendant

**DIV 22 - PLUMBING**

*Fixtures and Fittings 1:* SK-4: Double drain board stainless steel sink and stainless steel backsplash.

*Fixtures and Fittings 2:* FC-1 Two handle faucet, 8” centerset, Gooseneck spout, 1.5 GPM

*Fixtures and Fittings 3:* DSP-1: Disposer – Ag Laboratory Sink – 4” Dia Drain - 3 HP minimum

*Fixtures and Fittings 4:* ES-1: Emergency Drench Shower and Eye/Face Wash - Floor Mounted

*Fixtures and Fittings 5:* FD-1: Floor Drains - Finished Area

*Plumbing Special Requirements:* Pre-Rinse Pull Down Sprayer/ Faucet & washboards. See in "Other Requirements"

**DIV 23 - MECHANICAL**

*Supply Register:* S-2: Square Ceiling Diffuser

*Return Register:* RR-2: Return Grille

*Temp Summer:* 75° (max)

*Temp Winter:* 72° (min)

*Temp Control:* Room: Dedicated Room Temperature control

*Humidity Range:* 30% to 60%

*Special Security:* Mech Special Requirements: S-1, S-4, RR-1 registers are options. See Other Requirements, Mechanical

**DIV 26 - ELECTRICAL**

*Receptacles:* R-1: Receptacle, Standard duplex, all walls, spaced at 10” max OC, min 1 / wall

*Other Electrical Receptacles:* R-3: Receptacle, Surface Mounted In Plug Mold

*Electrical Special:* Provide plug mold 6” above counter, length of counter. All outlets are GFCI

**DIV 26 - LIGHTING**

*Lighting Fixture:* L-1B: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 94+ CRI Lamp

*Lighting Control:* LC-5: Combination Wall Switch with Occupancy Sensor & Dimmer

*Lighting Special:* Provide 70 FC at working surface.

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DIV 10 - FURNISHINGS AND EQUIPMENT  Chapter 14
Furnishings and Equipment 1: 30” (min) Refrigerator/Freezer, Adjustable Task Stool(s), Computer(s), printer, telephone
Furnishings and Equipment 2: Microscopes, desktop digital scale, magnetic knife holder, and hand sanitary dispenser
Furnishings and Equipment 3: Adjustable Task Chair(s)

OTHER REQUIREMENTS
Finishes: Wall behind stainless steel sink should have 24-inch high stainless steel washboard extending 36 inches at both ends of sink.
Plumbing:
4” Drain with solids interceptor at SK-4.
4” Drain for ES-1, Thermostatic Mixing Valve for ES-1
Provide hot and cold water connections and Thermostatic Mixing Valve for ES-1 to provide tepid water per ANSI Z358.1-1990
Mechanical: Negative pressure, 100% exhaust, Min 10 air changes per hour.
Some location may require a snorkel exhaust at counter in lieu of or in addition to the fume hood as determined by CBP. Dedicated Exhaust for Fume Hood Vent with HEPA filters. Fume Hood Vent - The purpose of the fume hood is to provide a safe and controlled environment in which to conduct activities associated with examinations.

DIV 27 - COMMUNICATIONS  Chapter 20
Phone Outlets: Phone 06 RJ-45 phone port, 1 per wall minimum
Data Outlets: Data 05: Data port, 1 per wall minimum
Communications Special

DIV 28 - SECURITY  Chapter 21
CCTV Camera: N/A
IDS: N/A
Access Control: Two factor, APL-listed card reader, DPS
Duress System: Mushroom Duress button, wall mounted
Security Special Requirements: Duress Button(s) must be accessible from garbage disposal and fume hood. Duress and disposal emergency cut-off switch near disposal unit.

SCHEMATIC PLAN  Agriculture Laboratory  CRG-01-02

Agriculture Lab CRG-01-02

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Agriculture disposal room is required to house the bins used for storing confiscated agriculture products until collection and disposal. The disposal room should be adjacent to the Agriculture Laboratory and directly accessible from the secondary processing area in order to enable easy access for collection and emptying of disposal bins. Disposal of prohibited and restricted agriculture and animal products must comply with US laws.

### DIV 08 - DOORS AND WINDOWS

**Room Function:** Agriculture Disposal Room

#### Door Type:
- B-B-01  Hollow Metal, Full flush, seamless

#### Door Frame:
- HM-1  Interior, 12 gauge hollow metal, fully welded

#### Door Lockset Group:
- C  Cylindrical Lever Lockset - Storeroom Function

#### Door Hardware Cylinder:
- A-1: Cylinder, keyed individually under a CBP Master

#### Door Hardware Group:
- K  Automatic Door Closer

#### Interior Window:

#### Exterior Windows:

#### Exterior Window / Door Glazing:

#### Special Requirements:
- Alt door: A-A Solid core Wood.
- Maximize Interior Window.

### DIV 09 - CONSTRUCTION AND FINISHES

#### Acoustic Separation:
- STC 45: Minimum sound isolation

#### Floor Finish:
- FF-10  Seamless epoxy-resin flooring system, slope to Floor drain(s).

#### Base:
- BF-04  Integral with seamless flooring, 8" H

#### Wall Construction:
- Wall-04  Gypsum Board on Metal Stud, uninsulated

#### Wall Finish:
- WF-04: Gypsum Board, 5/8” Moisture Resistant, Painted

#### Ceiling Const. / Finish:
- CF-07  Gypsum Board, 5/8” Moisture Resistant, Painted

#### Ceiling Remark:
- Acoustical tile not permitted.

#### Ceiling Height:
- 9’ min

#### Alternate Construction:
- Wall: Ceramic tile

#### Const Special Requirements:
- Wall finishes must be washable. Flooring to be chemical resistant.

### DIV 10 - FIXED EQUIPMENT

#### Fixed Equipment 1:
- HAZMAT containment unit cabinet

#### Fixed Equipment 2:

#### Fixed Equipment 3:
- Steam sterilizer/cooker, Autoclave, trash cans or Freezer. Determined by Port operations.

### DIV 21 - FIRE SUPPRESSION

**Sprinkler Head Type:** SPKLR-01  Pendant

**Fire Special Requirements:** Portable fire extinguishers must be installed in accordance with code requirements.

### DIV 22 - PLUMBING

#### Fixtures and Fittings 1:
- FD-1: Floor Drains - Finished Area

#### Fixtures and Fittings 2:

#### Fixtures and Fittings 3:

#### Fixtures and Fittings 4:

#### Fixtures and Fittings 5:

#### Fixtures and Fittings 6:

#### Fixtures and Fittings 7:

#### Plumbing Special Requirements:
- 4” drain pipe. Provide water line with shut-off valve and backflow preventer for Sterilizer/Cooker.

### DIV 23 - MECHANICAL

**Supply Register:** S-3: Supply Grille

**Return Register:** RR-2: Return Grille

**Temp Summer:**

**Temp Winter:**

**Temp Control:** Either: Room or Zone Temperature control

**Humidity Range:**

**Special Security:**

**Mech Special Requirements:** Provide HVAC and exhaust as required by equipment manufacturer

### DIV 26 - ELECTRICAL

**Receptacles:** R-1: Receptacle, Standard duplex, as required by code

**Other Electrical Receptacles:**

**Electrical Special Requirements:** Dedicated receptacle per equipment manufacturer

### DIV 26 - LIGHTING

**Lighting Fixture:**
- L-4: Lighting Fixture, Surface Mounted or Pendant 1x4 Direct/Indirect

**Fixture Types Optional/Special:**

**Lighting Control:**
- LC-4: Combination Wall Switch with Occupancy Sensor

**Lighting Special Requirements:** Provide 30 FC at floor level.

---

**CFDS – 2019 – ROOM DATA SHEETS**

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### DIV 10 - Furnishings and Equipment

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Mobile utility cart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

### DIV 27 - Communications

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications Special</td>
<td></td>
</tr>
</tbody>
</table>

### DIV 28 - Security

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>IDS included if Room is part of building perimeter, HSS-2</td>
</tr>
<tr>
<td>Access Control:</td>
<td>Two factor, APL-listed card reader, DPS</td>
</tr>
<tr>
<td>Duress System:</td>
<td>N/A</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td>IDS is required if the Agricultural Disposal Room utilizes a garbage chute</td>
</tr>
</tbody>
</table>

### Other Requirements

Steam Sterilizer/Autoclave: shall be capable of heating regulated garbage/QMIs to an internal temperature of 212°F for at least 30 minutes.

---

**SCHEMATIC PLAN**

Agriculture Disposal Room

![Agriculture Disposal Room Schematic](image-url)
The Tool Storage area is used by CBP Officers within the Secondary Inspection Area. The Tool Storage area is located within the secondary inspection area. Within the enclosed secondary building it does not need to be a separate enclosed space as long as there is adequate floor area for this purpose.

1.0 INSPECTION SUPPORT SPACES

DIV 08 - DOORS AND WINDOWS

<table>
<thead>
<tr>
<th>Door Type:</th>
<th>Exterior Door</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Frame:</td>
<td>Exterior Door</td>
</tr>
<tr>
<td>Door Lockset Group:</td>
<td>Door Lockset Group</td>
</tr>
<tr>
<td>Door Hardware Cylinder:</td>
<td>Door Hardware Cylinder</td>
</tr>
<tr>
<td>Door Hardware Group:</td>
<td>Door Hardware Group</td>
</tr>
<tr>
<td>Interior Window:</td>
<td>Interior Window</td>
</tr>
<tr>
<td>Exterior Windows:</td>
<td>Exterior Windows</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing:</td>
<td>Exterior Window / Door Glazing</td>
</tr>
<tr>
<td>Special Requirements:</td>
<td>Refer to Secondary Inspection Area for room requirements</td>
</tr>
</tbody>
</table>

DIV 09 - CONSTRUCTION AND FINISHES

| Acoustical Separation: | No Special Acoustical Requirement |
| Floor Finish: | Base |
| Wall Construction: | Wall Finish |
| Ceiling Const. / Finish: | Ceiling Remark |
| Ceiling Height: | 9' min |
| Alternate Construction: | Alt Special Construction |
| Const Special Requirements: | Refer to Secondary Inspection Area for room requirements |

DIV 10 - FIXED EQUIPMENT

| Fixed Equipment 1: | Fixed Equipment 2: |
| Fixed Equipment 3: | Fixed Equipment 4: |
| Fixed Equipment 5: | Fixed Equipment 6: |

DIV 21 - FIRE SUPPRESSION

| Sprinkler Head Type: | SPKLR-01 Pendant |
| Fire Special Requirements: | Fire Special Requirements |

DIV 22 - PLUMBING

| Fixtures and Fittings 1: | NA |
| Fixtures and Fittings 2: | Fixtures and Fittings 3: |
| Fixtures and Fittings 4: | Fixtures and Fittings 5: |
| Fixtures and Fittings 6: | Fixtures and Fittings 7: |
| Plumbing Special Requirements: | Plumbing Special Requirements |

DIV 23 - MECHANICAL

| Supply Register: | Return Register: |
| Temp Summer | Temp Winter |
| Temp Control: | Humidity Range: |
| Special Security: | Mech Special Requirements: |
| Refer to Secondary Inspection Area for room requirements. | Refer to Secondary Inspection Area for room requirements. |

DIV 26 - ELECTRICAL

| Other Electrical Receptacles: | Electrical Special Requirements: |
| Refer to Secondary Inspection Area for room requirements. | Refer to Secondary Inspection Area for room requirements. |

DIV 26 - LIGHTING

| Lighting Fixture: | Lighting Fixture: |
| Fixtures Optional/Special: | Fixtures Optional/Special: |
| Lighting Control: | Lighting Control: |
| Lighting Special Requirements: | Lighting Special Requirements: |
| Refer to Secondary Inspection Area for room requirements. | Refer to Secondary Inspection Area for room requirements. |
### DIV 10 - FURNISHINGS AND EQUIPMENT | Chapter 14

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool Storage Container, lockable and Tools</td>
</tr>
<tr>
<td>Furnishings and Equipment 2:</td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
</tr>
</tbody>
</table>

### DIV 27 - COMMUNICATIONS | Chapter 20

<table>
<thead>
<tr>
<th>Communications Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone Outlets: N/A</td>
</tr>
<tr>
<td>Data Outlets: N/A</td>
</tr>
</tbody>
</table>

### DIV 28 - SECURITY | Chapter 21

<table>
<thead>
<tr>
<th>Security Special Requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCTV Camera: N/A</td>
</tr>
<tr>
<td>IDS: N/A</td>
</tr>
<tr>
<td>Access Control: N/A</td>
</tr>
<tr>
<td>Duress System: N/A</td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

<table>
<thead>
<tr>
<th>Other Requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets: N/A</td>
</tr>
</tbody>
</table>

### SCHEMATIC PLAN

**Tool Storage Room**

**Tool Storage Room**

**NOT TO SCALE**

For Reference Purposes Only
The Fraud/Forensic Laboratory is used by CBP Officers and enforcement staff to review and determine the authenticity of suspected fraudulent entrance documents. Fraud/Forensic Laboratory is located behind the documentation work area, not within hardened violator space.

The Fraud/Forensic Laboratory is required in the Operational Support Area.

### DIV 08 - DOORS AND WINDOWS

**Room Code:** CRG-01-05

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Type</td>
<td>B-B-01 Hollow Metal, Full flush, seamless</td>
</tr>
<tr>
<td>Door Frame</td>
<td>HM-1 Interior, 12 gauge hollow metal, fully welded</td>
</tr>
<tr>
<td>Door Lockset Group</td>
<td>N Electrified Mortise Lock with Lever set and built-in REX function &amp; key override</td>
</tr>
<tr>
<td>Door Hardware Cylinder</td>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
</tr>
<tr>
<td>Door Hardware Group</td>
<td>B Automatic Door Bottom, E Door Threshold, K Automatic Door Closer, X Power Transfer Hinge</td>
</tr>
<tr>
<td>Interior Window</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Windows</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### DIV 09 - CONSTRUCTION AND FINISHES

**Room Code:** CRG-01-05

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic Separation</td>
<td>STC 45: Minimum sound isolation</td>
</tr>
<tr>
<td>Floor Finish</td>
<td>FF-04 VCT</td>
</tr>
<tr>
<td>Base</td>
<td>BF-01 Rubber Base, 4” H</td>
</tr>
<tr>
<td>Wall Construction</td>
<td>Wall-01 Gypsum Board on Wood Stud, Sound Insulation</td>
</tr>
<tr>
<td>Wall Finish</td>
<td>WF-01: Gypsum Board, 5/8” Regular, Painted</td>
</tr>
<tr>
<td>Ceiling Constr. / Finish</td>
<td>CF-03: Acoustic Ceiling Tile, Suspended</td>
</tr>
<tr>
<td>Ceiling Remark</td>
<td>Alt ceiling: 5/8” gypsum board.</td>
</tr>
<tr>
<td>Ceiling Height</td>
<td>9’ min</td>
</tr>
<tr>
<td>Alternate Construction</td>
<td>N/A</td>
</tr>
<tr>
<td>Const Special Requirements</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### DIV 10 - FIXED EQUIPMENT

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Equipment 1</td>
<td>Stainless Steel Counters/Backsplash, Stainless Steel Open Wall Shelving</td>
</tr>
<tr>
<td>Fixed Equipment 2</td>
<td>Cabinet, GSA-approved Class V, FF-L-2740B lock on each drawer</td>
</tr>
<tr>
<td>Fixed Equipment 3</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### DIV 21 - FIRE SUPPRESSION

**Room Code:** CRG-01-05

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprinkler Head Type</td>
<td>SPKLR-08 Semi-Recessed Pendant</td>
</tr>
</tbody>
</table>

### DIV 22 - PLUMBING

**Room Code:** CRG-01-05

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixtures and Fittings 1</td>
<td>NA</td>
</tr>
<tr>
<td>Fixtures and Fittings 2</td>
<td>NA</td>
</tr>
<tr>
<td>Fixtures and Fittings 3</td>
<td>NA</td>
</tr>
<tr>
<td>Fixtures and Fittings 4</td>
<td>NA</td>
</tr>
<tr>
<td>Fixtures and Fittings 5</td>
<td>NA</td>
</tr>
<tr>
<td>Fixtures and Fittings 6</td>
<td>NA</td>
</tr>
</tbody>
</table>

### DIV 23 - MECHANICAL

**Room Code:** CRG-01-05

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Register</td>
<td>S-2: Square Ceiling Diffuser</td>
</tr>
<tr>
<td>Return Register</td>
<td>RR-2: Return Grille</td>
</tr>
<tr>
<td>Temp Summer</td>
<td>75° (max)</td>
</tr>
<tr>
<td>Temp Winter</td>
<td>72° (min)</td>
</tr>
<tr>
<td>Humidity Range</td>
<td>Room: Dedicated Room Temperature control</td>
</tr>
<tr>
<td>Special Security</td>
<td>30% to 60%</td>
</tr>
<tr>
<td>Mech Special Requirements</td>
<td>S-1, S-4, RR-1 registers are options.</td>
</tr>
</tbody>
</table>

### DIV 24 - ELECTRICAL

**Room Code:** CRG-01-05

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptacles</td>
<td>R-1: Receptacle, Standard duplex, all walls, spaced at 10’-0” max OC, min 1 / wall</td>
</tr>
<tr>
<td>Other Electrical Receptacles</td>
<td>N/A</td>
</tr>
<tr>
<td>Electical Special</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### DIV 25 - LIGHTING

**Room Code:** CRG-01-05

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting Fixture</td>
<td>L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp</td>
</tr>
<tr>
<td>Fixtures Types</td>
<td>N/A</td>
</tr>
<tr>
<td>Lighting Control</td>
<td>LC-5: Combination Wall Switch with Occupancy Sensor &amp; Dimmer</td>
</tr>
<tr>
<td>Lighting Special</td>
<td>Provide 50 FC at working surface. Black light capability.</td>
</tr>
<tr>
<td>DIV 10 - FURNISHINGS AND EQUIPMENT</td>
<td>DIV 27 - COMMUNICATIONS</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Furnishings and Equipment 1:</td>
<td>Phone Outlets: Phone 01</td>
</tr>
<tr>
<td>Blacklight, Digital Imaging-related equipment, Microscope, Photo-phone</td>
<td>Single RJ-45 port</td>
</tr>
<tr>
<td>Furnishings and Equipment 2:</td>
<td>Data Outlets: Data 01:</td>
</tr>
<tr>
<td>Narcotics test kit, Reference library, Tack board</td>
<td>Single data port</td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td>Communications Special</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OTHER REQUIREMENTS**

Cargo / Express: ECO to provide black light, magnifying loops, Edison Software, digital camera, Video Spectral Comparator imaging system, and microscope.

**SCHEMATIC PLAN**

Fraud/Forensic Laboratory

---

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Seizure Processing

The Seizure Processing Area is adjacent to temporary seized property storage, with a minimum 2 feet clearance between the temporary vault wall and the seizure processing area perimeter wall. Seizure Processing is located within the access-controlled secure area of the cargo facility and requires an access route to transport contents into a secure corridor that leads to the sallyport or controlled exterior transfer point. One Seizure Processing Area space is required if there are more than 15 CBP officers based on the peak shift size of CBP officers.

<table>
<thead>
<tr>
<th>DIV 08 - DOORS AND WINDOWS</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Door Type:</strong> B-B-01 Hollow Metal, Full flush, seamless</td>
<td></td>
</tr>
<tr>
<td><strong>Door Frame:</strong> HM-1 Interior, 12 gauge hollow metal, fully welded</td>
<td></td>
</tr>
<tr>
<td><strong>Door Lockset Group:</strong> N Electrified Mortise Lock with Lever set and built-in REX function &amp; key override</td>
<td></td>
</tr>
<tr>
<td><strong>Door Hardware Group:</strong> A-1: Cylinder, keyed individually under a CBP Master, D Door Stop, K Automatic Door Closer, X Power Transfer Hinge</td>
<td></td>
</tr>
<tr>
<td><strong>Interior Window:</strong> N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Exterior Windows:</strong> N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Exterior Window / Door Glazing:</strong> N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Special Requirements:</strong> See Other Requirements below.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 09 - CONSTRUCTION AND FINISHES</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acoustic Separation:</strong> STC 45: Minimum sound isolation</td>
<td></td>
</tr>
<tr>
<td><strong>Floor Finish:</strong> FF-03 Concrete, troweled, uniform texture and appearance, sealed</td>
<td></td>
</tr>
<tr>
<td><strong>Base:</strong> N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Wall Construction:</strong> Wall-08 CMU - 8&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Wall Finish:</strong> WF-13: Paint, Semi-gloss</td>
<td></td>
</tr>
<tr>
<td><strong>Ceiling Const. / Finish:</strong> CF-02: 5/8&quot; Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted</td>
<td></td>
</tr>
<tr>
<td><strong>Ceiling Remark:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ceiling Height:</strong> 9' min</td>
<td></td>
</tr>
<tr>
<td><strong>Alternate Construction:</strong> Walls: Gypsum Board on #9(10 Ga) Expanded Metal Mesh on Stud, Sound Insulation</td>
<td></td>
</tr>
<tr>
<td><strong>Const Special Requirements:</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 10 - FIXED EQUIPMENT</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed Equipment 1:</strong> Fume Hood with dedicated exhaust &amp; HEPA filters</td>
<td></td>
</tr>
<tr>
<td><strong>Fixed Equipment 2:</strong> 24 - 64 SF Workstation</td>
<td></td>
</tr>
<tr>
<td><strong>Fixed Equipment 3:</strong> Floor Scale</td>
<td></td>
</tr>
</tbody>
</table>

---

**DIV 21 - FIRE SUPPRESSION**

**Sprinkler Head Type:** SPKLR-01 Pendant

**Fire Special Requirements:**

**DIV 22 - PLUMBING**

**Fixtures and Fittings 1:** NA

**Fixtures and Fittings 2:**

**Fixtures and Fittings 3:**

**Fixtures and Fittings 4:**

**Fixtures and Fittings 5:**

**Fixtures and Fittings 6:**

**Fixtures and Fittings 7:**

**Plumbing Special**

---

**DIV 23 - MECHANICAL**

**Supply Register:** S-2: Square Ceiling Diffuser

**Return Register:** RR-2: Return Grille

**Temp Summer:** 75° (max)

**Temp Winter:** 72° (min)

**Temp Control:** Room: Dedicated Room Temperature control

**Humidity Range:** 45% (+/-5%) Special Security

**Mech Special Requirements:** Exhaust 100% of the air from any space where seized narcotics are processed. Exhaust should be downwind from Inspection areas and kennel.

**DIV 26 - ELECTRICAL**

**Receptacles:** R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall

**Other Electrical Receptacles:**

**Electrical Special:** Portable UPS

---

**DIV 26 - LIGHTING**

**Lighting Fixture:** L-2: Lighting Fixture, Recessed 2x2 or 2x4 Acrylic Lens, 80+ CRI Lamp

**Fixture Types Optional/Special:** L-15: Lighting Fixture, Surface Mounted Task Light

**Lighting Control:** LC-4: Combination Wall Switch with Occupancy Sensor

**Lighting Special:** Provide 40 FC at working surface.
### DIV 10 - FURNISHINGS AND EQUIPMENT

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Adjustable Task Chair(s), Evidence Prep Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td>Currency Counting Equipment, Stainless Steel Work Table</td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

The card reader shall be integrated to the locking mechanism. One shouldn’t work without the other. Appropriately authorized card and key should be necessary for access. Must meet NFPA 101 requirements.

Special Construction Note: Installation of #9(10 Ga) Expanded Metal Mesh wall/ceiling reinforcement must be inspected by CBP prior to covering.

### DIV 27 - COMMUNICATIONS

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>Phone 06 RJ-45 phone port, 1 per wall minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>Data 05: Data port, 1 per wall minimum</td>
</tr>
<tr>
<td>Communications Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

### DIV 28 - SECURITY

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>Fixed CCTV wide-angle lens camera, monitored at CCC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>IDS &amp; Alarm, UPS, Keypad control inside, adjacent to door, HSS-2</td>
</tr>
<tr>
<td>Access Control:</td>
<td>Two factor, APL-listed card reader</td>
</tr>
<tr>
<td>Duress System:</td>
<td>N/A</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td>Camera(s) shall provide full coverage of the operations taking place within the space.</td>
</tr>
</tbody>
</table>

### DIV 29 - CONSTRUCTION

<table>
<thead>
<tr>
<th>DIV 10 - FURNISHINGS AND EQUIPMENT</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 1:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 2:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

### SCHEMATIC PLAN

**Seizure Processing Area**

- Access Control/Card Reader
- IDS Keypad
- 9 ga. Expanded Steel Mesh to Reinforce Wall
- Currency Counting Equipment
- Chair
- Heavy Duty Shelving
- Evidence Prep Equipment
- Camera
- IDS Sensor
- Modular System Desk
**Temporary Seized Property Storage**

The Temporary Seized Property Storage is a hardened secure room within restricted space used for the temporary storage (72 hours or less) of seized property. This room is located adjacent to the seizure processing area, NOT within the Violator area. If the temporary storage of seized property exceeds 72 hours, a permanent vault must be used. If the seized property exceeds the size of the temporary vault, the property must be transported to the nearest permanent vault.

Small facilities: One (1) room with a safe for seized narcotics.

Mid-size facilities: One (1) room with an enclosure for seized narcotics separated from other areas of the room.

Large facilities: Two (2) separate rooms.

### 1.0 INSPECTION SUPPORT SPACES

#### DIV 08 - DOORS AND WINDOWS

| Door Type: | FE-1 SD-STD-01.01, Revision G (Amended) (Opaque) 5 min FE |
| Door Frame: | WS-1, Formed, reinforced and welded steel. |
| Door Lockset Group: | M LKM (Lockmaster) 7000 series, FF-L-2890B single motion egress/panic-deadbolt |
| Door Hardware Cylinder: | A-2: Cylinder, keyed individually NOT under a CBP Master |
| Door Hardware Group: | J Non-Removable Hinges (outswing), K Automatic Door Closer, X Power Transfer Hinge |

#### DIV 09 - CONSTRUCTION AND FINISHES

| Acoustic Separation: | No Special Acoustical Requirement |
| Floor Finish: | FF-12, Concrete, Sealed 8", with 5/8" reinforcing bars 6" OC each way |
| Base: | N/A |
| Wall Construction: | Wall-09 CMU - 8" - Secure - Vertical Rebar at 16" OC (every block), fully grouted |
| Wall Finish: | WF-13: Paint, Semi-gloss |
| Ceiling Const. / Finish: | CF-08 8" concrete with 5/8" rebars at 6" O.C, EW |

#### DIV 10 - FIXED EQUIPMENT

- **Fixed Equipment 1:** Cabinet, GSA-approved Class V, FF-L-2740B lock on each drawer
- **Fixed Equipment 2:** Legal File Cabinet, GSA Class V, Multi-lock, FF-L-2740B lock on each drawer
- **Fixed Equipment 3:** Heavy-duty metal shelving mounted to wall.

### CFDS – 2019 – ROOM DATA SHEETS

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DIV 10 - FURNISHINGS AND EQUIPMENT

Furnishings and Equipment 1:

Furnishings and Equipment 2:

Furnishings and Equipment 3:

OTHER REQUIREMENTS

This room must comply with “Seized Property Vaults and Storage Rooms for Permanent and Temporary Storage” and the relevant sections of the CBP Security Policy and Procedures Handbook, 1400-02B (latest edition) to be provided by CBP. The room also must comply with the US Drug Enforcement Administration 21 CFR 1301.72-1301.73. The most stringent requirements of each shall take precedence. The design must be planned with and approved by OFO Fines, Penalties and Forfeitures Division. The wall reinforcement shall be tied into the floor and ceiling reinforcement. All seized property spaces shall be located far from kennel spaces.

DIV 27 - COMMUNICATIONS

Phone Outlets: N/A

Data Outlets: Data 02: Dual data port

Communications Special

DIV 28 - SECURITY

CCTV Camera: Tamper-proof fixed wide-angle camera to monitor full room interior, connected to CCC

IDS: IDS & Alarm, UPS, Keypad control inside, adjacent to door, HSS-2

Access Control: Two factor, APL-listed card reader

Duress System: N/A

Security Special Requirements: Install Dual Tech volumetric motion sensors. Alarm panel to be mounted on the vault interior.

SCHEMATIC PLAN

Temporary Seized Property Storage

Legal File Cabinet

IDS Sensor

Evidence Prep Equipment

Class V Safe w/ X-10 lock

Wire Mesh Partition

Camera

Storage Cabinets

IDS Sensor

Access Control/ Card Reader

IDS Keypad

Temporary Seized Property Storage

CFDS – 2019 – ROOM DATA SHEETS

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Examination and physical inspection is carried out on work tables where CBP personnel examine shipments. CBP Agriculture Specialists may open the shipments at the examination tables. CBP officers also work at inspection workstations that are equipped with terminals for data input. Additional space is provided in this area, as necessary, for mass cargo inspection. Separate Intensive examination area optional. At cargo induction points into CBP enclosure, all processing areas shall be co-located on ground floor; close to cargo holding areas and CBP office areas.

### 1.0 INSPECTION SUPPORT SPACES

<table>
<thead>
<tr>
<th>DIV 08 - DOORS AND WINDOWS</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Type:</td>
<td>OH-1 Commercial Grade Overhead 12&quot; - 16'W x 16'H</td>
</tr>
<tr>
<td>Door Frame:</td>
<td>AL-2 Interior Aluminum Storefront System</td>
</tr>
<tr>
<td>Door Lockset Group:</td>
<td>A Mortise Lever Lockset - Classroom Function</td>
</tr>
<tr>
<td>Door Hardware Cylinders:</td>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
</tr>
<tr>
<td>Door Hardware Group:</td>
<td>B Automatic Door Bottom</td>
</tr>
<tr>
<td>Interior Window:</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Windows:</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing:</td>
<td>N/A</td>
</tr>
<tr>
<td>Special Requirements:</td>
<td>Door and door frame to accommodate container and pallet inspection. Verify processing with OFO.</td>
</tr>
</tbody>
</table>

### DIV 09 - CONSTRUCTION AND FINISHES

| Acoustic Separation:        | N/A |
| Floor Finish:               | FF-03 Concrete, troweled, uniform texture and appearance, sealed |
| Base:                       | BF-01 Rubber Base |
| Wall Construction:          | Wall-08 CMU - 8" |
| Wall Finish:                | WF-13: Paint, Semi-gloss |
| Ceiling Const. / Finish:    | CF-05 Exposed Structure, Suspended ceiling not permitted |

### DIV 10 - FIXED EQUIPMENT

| Fixed Equipment 1:          | Ergonomic Table, Mar-resistant, 60"L x 30"W x 32" - 42" H |
| Fixed Equipment 2:          | 64 SF Workstation, Work counters w/ knee space, drawers, and low storage cabinets |
| Fixed Equipment 3:          | NII equipment and conveyor equipment. Verify type, size and need with OFO |

### DIV 21 - FIRE SUPPRESSION

<table>
<thead>
<tr>
<th>Type: SPKLR-01 Pendant</th>
</tr>
</thead>
</table>

### DIV 22 - PLUMBING

| ES-1: Emergency Drench Shower and Eye/Face Wash - Floor Mounted |
| FD-1: Floor Drains - Finished Area |

### DIV 23 - MECHANICAL

| S-2: Square Ceiling Diffuser |
| RR-2: Return Grille |
| Temp Summer: 75° (max) |
| Temp Winter: 72° (min) |
| Room: Dedicated Room Temperature control |
| Humidity Range: 30% to 60% |
| Special Security: Exhaust at 6 air changes per hour; |

### DIV 26 - ELECTRICAL

| R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max Oc, min 1 / wall |
| Other Electrical Receptacles: |
| Electrical Special: Provide receptacles for workstations |

### DIV 26 - LIGHTING

| L-1A: Lighting Fixture; Direct/Indirect, Recessed 2x2 or 2x4, 85+ CRI Lamp |
| Fixture Types Optional/Special: |
| Lighting Control: LC-4: Combination Wall Switch with Occupancy Sensor |
| Lighting Special: Illumination of 70 ft.-candles minimum at the work surfaces without shadow or glare |

**CFDS – 2019 – ROOM DATA SHEETS**

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### FURNISHINGS AND EQUIPMENT

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Adjustable Task Chair(s), Recycle Bin, Waste Bin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td>Anti-Fatigue Mat(s), Computer(s), printer, File Cabinet, Standard 4 drawer, Video Monitor(s)</td>
</tr>
</tbody>
</table>
| Furnishings and Equipment 3: | Phone Outlets: Phone 06 RJ-45 port, 1 per wall minimum  
Data Outlets: Data 05: Data port, 1 per wall minimum  
Communications Special: Provide data and phone ports for workstations  
CCTV Camera: N/A  
IDS: N/A  
Access Control: N/A  
Duress System: N/A  
Security Special Requirements: |

### OTHER REQUIREMENTS

- **DIV 10 - FURNISHINGS AND EQUIPMENT (Chapter 14)**
- **DIV 27 - COMMUNICATIONS (Chapter 20)**
- **DIV 28 - SECURITY (Chapter 21)**

### SCHEMATIC PLAN

Examination and Physical Inspection Area

---

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Cargo Release Area

Cargo Release Area

Cargo that has been detained for inspection, once approved for release, is transferred to the cargo release area. Close to cargo examination and physical inspection areas and CBP operational support areas.

### 1.0 INSPECTION SUPPORT SPACES

<table>
<thead>
<tr>
<th>DIV 08 - DOORS AND WINDOWS</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Type:</td>
<td>B-B-01 Hollow Metal, Full flush, seamless</td>
</tr>
<tr>
<td>Door Frame:</td>
<td>HM-4 Exterior, 12 gauge hollow metal, fully welded, galvanized</td>
</tr>
<tr>
<td>Door Lockset Group:</td>
<td>D High Security Mortise Lever Lockset w/ Deadbolt - Storeroom Function</td>
</tr>
<tr>
<td>Door Hardware Cylinder:</td>
<td>A-2: Cylinder, keyed individually NOT under a CBP Master</td>
</tr>
<tr>
<td>Door Hardware Group:</td>
<td>J Non-Removable Hinges (outswing), K Automatic Door Closer, L Anti-Pry Strip (inswing), N/A</td>
</tr>
<tr>
<td>Interior Window:</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Windows:</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing:</td>
<td>N/A</td>
</tr>
<tr>
<td>Special Requirements:</td>
<td>Provide 12’ sliding or swing gate pair, chain link to match fencing. Height and width to suit forklift.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 09 - CONSTRUCTION AND FINISHES</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic Separation:</td>
<td>N/A</td>
</tr>
<tr>
<td>Floor Finish:</td>
<td>FF-03 Concrete, troweled, uniform texture and appearance, sealed</td>
</tr>
<tr>
<td>Base:</td>
<td>N/A</td>
</tr>
<tr>
<td>Wall Construction:</td>
<td>Wall-17 HD Galv. Chain link 12’ H</td>
</tr>
<tr>
<td>Wall Finish:</td>
<td></td>
</tr>
<tr>
<td>Ceiling Const. / Finish:</td>
<td></td>
</tr>
<tr>
<td>Ceiling Remark:</td>
<td></td>
</tr>
<tr>
<td>Ceiling Height:</td>
<td>As required at warehouse</td>
</tr>
<tr>
<td>Alternate Construction:</td>
<td></td>
</tr>
<tr>
<td>Const Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 10 - FIXED EQUIPMENT</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Equipment 1:</td>
<td>Metal Shelving, Heavy Duty, 5 shelf, 18” x 36” x 85”H</td>
</tr>
<tr>
<td>Fixed Equipment 2:</td>
<td>Ergonomic Table, Mar-resistant, 60”L x 30”W x 32” - 42” H</td>
</tr>
<tr>
<td>Fixed Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 21 - FIRE SUPPRESSION</th>
<th>Chapter 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprinkler Head Type:</td>
<td>SPKLR-01 Pendant</td>
</tr>
<tr>
<td>Fire Special Requirements:</td>
<td>Portable fire extinguishers must be installed in accordance with code requirements.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 22 - PLUMBING</th>
<th>Chapter 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixtures and Fittings 1:</td>
<td>NA</td>
</tr>
<tr>
<td>Fixtures and Fittings 2:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 3:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 4:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 5:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 6:</td>
<td></td>
</tr>
<tr>
<td>Plumbing Special:</td>
<td>ES-1 Emergency Shower to be located outside of structure.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 23 - MECHANICAL</th>
<th>Chapter 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Register:</td>
<td>S-2: Square Ceiling Diffuser</td>
</tr>
<tr>
<td>Return Register:</td>
<td>RR-2: Return Grille</td>
</tr>
<tr>
<td>Temp Summer:</td>
<td>75° (max)</td>
</tr>
<tr>
<td>Temp Winter:</td>
<td>72° (min)</td>
</tr>
<tr>
<td>Temp Control:</td>
<td>Room: Dedicated Room Temperature control</td>
</tr>
<tr>
<td>Humidity Range:</td>
<td>30% to 60%</td>
</tr>
<tr>
<td>Special Security:</td>
<td>N/A</td>
</tr>
<tr>
<td>Mech Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 26 - ELECTRICAL</th>
<th>Chapter 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptacles:</td>
<td>R-1: Receptacle, Standard duplex, all walls, spaced at 10’-0” max OC, min 1 / wall</td>
</tr>
<tr>
<td>Other Electrical Receptacles:</td>
<td>N/A</td>
</tr>
<tr>
<td>Electrical Special:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 26 - LIGHTING</th>
<th>Chapter 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting Fixture:</td>
<td>L-16: Light Fixture, Surface Mounted High Bay</td>
</tr>
<tr>
<td>Fixture Types Optional/Special:</td>
<td></td>
</tr>
<tr>
<td>Lighting Control:</td>
<td>LC-1: Light Switch</td>
</tr>
<tr>
<td>Lighting Special:</td>
<td>Provide 50 fc at floor level.</td>
</tr>
</tbody>
</table>

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DIV 10 - FURNISHINGS AND EQUIPMENT  Chapter 14
Furnishings and Equipment 1:
Furnishings and Equipment 2:
Furnishings and Equipment 3:

DIV 27 - COMMUNICATIONS  Chapter 20
Phone Outlets: N/A
Data Outlets: N/A
Communications Special:

DIV 28 - SECURITY  Chapter 21
CCTV Camera: Fixed CCTV wide-angle lens camera, monitored at CCC.
IDS: N/A
Access Control: Two factor, APL-listed card reader, DPS
Duress System: N/A
Security Special Requirements:

OTHER REQUIREMENTS

SCHEMATIC PLAN  Cargo Release Area  CRG-01-09

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Unreleased Cargo Holding Area

This area is used to store cargo that must remain under CBP control, such as shipments awaiting inspection and various clearances. Close to Cargo examination and physical inspection areas and CBP operational support areas.

1.0 INSPECTION SUPPORT SPACES

DIV 08 - DOORS AND WINDOWS

Door Type: B-B-01 Hollow Metal, Full flush, seamless
Door Frame: HM-4 Exterior, 12 gauge hollow metal, fully welded, galvanized
Door Lockset Group: D High Security Mortise Lever Lockset w/ Deadbolt - Storeroom Function
Door Cylinder: A-1: Cylinder, keyed individually under a CBP Master
Door Hardware Group: J Non-Removable Hinges (outswing), K Automatic Door Closer, L Anti-Pry Strip (inswing), N/A
Interior Window: N/A
Exterior Windows: N/A
Exterior Window / Door Glazing: N/A
Special Requirements: Provide 12' sliding or swing gate pair, chain link to match fencing. Height and width to suit forklift.

DIV 09 - CONSTRUCTION AND FINISHES

Acoustic Separation: N/A
Floor Finish: FF-03 Concrete, troweled, uniform texture and appearance, sealed
Base: N/A
Wall Construction: Wall-17 HD Galv. Chain link 12' H
Wall Finish: 
Ceiling Const. / Finish: 
Ceiling Remark: 
Ceiling Height: As required at warehouse
Alternate Construction: 
Const Special Requirements: 

DIV 10 - FIXED EQUIPMENT

Fixed Equipment 1: Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H
Fixed Equipment 2: Ergonomic Table, Mar-resistant, 60"L x 30"W x 32" - 42" H
Fixed Equipment 3: 

DIV 21 - FIRE SUPPRESSION

Sprinkler Head Type: SPKLR-01 Pendant
Fire Special Requirements: Portable fire extinguishers must be installed in accordance with code requirements.

DIV 22 - PLUMBING

Fixtures and Fittings 1: NA
Fixtures and Fittings 2: 
Fixtures and Fittings 3: 
Fixtures and Fittings 4: 
Fixtures and Fittings 5: 
Fixtures and Fittings 6: 
Fixtures and Fittings 7: 
Plumbing Special Requirements: ES-1 Emergency Shower to be located outside of structure.

DIV 23 - MECHANICAL

Supply Register: S-2: Square Ceiling Diffuser
Return Register: RR-2: Return Grille
Temp Summer: 75° (max)
Temp Winter: 72° (min)
Temp Control: Room: Dedicated Room Temperature control
Humidity Range: 30% to 60%
Special Security: N/A
Mech Special Requirements: 

DIV 26 - ELECTRICAL

Receptacles: R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall
Other Electrical Receptacles: N/A
Electrical Special: 

DIV 26 - LIGHTING

Fixture Type: L-16: Light Fixture, Surface Mounted High Bay
Lighting Control: LC-1: Light Switch
Lighting Special: Provide 50 fc at floor level.
**DIV 10 - FURNISHINGS AND EQUIPMENT** | **DIV 27 - COMMUNICATIONS**
---|---
Furnishings and Equipment 1: | Phone Outlets: N/A
Furnishings and Equipment 2: | Data Outlets: N/A
Furnishings and Equipment 3: | Communications Special

**OTHER REQUIREMENTS**

**DIV 28 - SECURITY**

CCTV Camera: Fixed CCTV wide-angle lens camera, monitored at CCC.
IDS: N/A
Access Control: Two factor, APL-listed card reader, DPS
Duress System: N/A
Security Special Requirements:

**SCHEMATIC PLAN**

Unreleased Cargo Holding Area

---

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This area is used to store cargo that have been detained or are pending further processing. Within its large enclosure, this area will also house secured storage closets to store materials that are awaiting a determination for their disposition. Close to Cargo examination and physical inspection areas and CBP operational support areas.

**DIV 08 - DOORS AND WINDOWS**

<table>
<thead>
<tr>
<th>Door Type:</th>
<th>B-B-01 Hollow Metal, Full flush, seamless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Frame:</td>
<td>HM-4 Exterior, 12 gauge hollow metal, fully welded, galvanized</td>
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<tr>
<td>Door Lockset Group:</td>
<td>D High Security Mortise Lever Lockset w/ Deadbolt - Storeroom Function</td>
</tr>
<tr>
<td>Door Cylinder:</td>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
</tr>
<tr>
<td>Door Hardware Group:</td>
<td>J Non-Removable Hinges (outswing), K Automatic Door Closer, L Anti-Pry Strip (inswing), N/A</td>
</tr>
</tbody>
</table>

**DIV 09 - CONSTRUCTION AND FINISHES**

| Acoustic Separation: | N/A |
| Floor Finish: | FF-03 Concrete, troweled, uniform texture and appearance, sealed |
| Base: | N/A |
| Wall Construction: | Wall-08 CMU - 8" |
| Ceiling Const. / Finish: | N/A |
| Ceiling Remark: | As required at warehouse |
| Ceiling Height: | As required at warehouse |
| Alternate Construction: | Wall-17 HD Galv. Chain link 12’ H |
| Const Special Requirements: | Chain Link Walls, shall go slab-to-slab |

**DIV 10 - FIXED EQUIPMENT**

| Fixed Equipment 1: | Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H, Palette racks |
| Fixed Equipment 2: | Ergonomic Table, Mar-resistant, 60"L x 30"W x 32" - 42" H |

**DIV 21 - FIRE SUPPRESSION**

| Sprinkler Head Type: | SPKLR-01 Pendant |
| Fire Special Requirements: | Portable fire extinguishers must be installed in accordance with code requirements. |

**DIV 22 - PLUMBING**

| Fixtures and Fittings 1: | NA |

**DIV 23 - MECHANICAL**

| Supply Register: | S-2: Square Ceiling Diffuser |
| Return Register: | RR-2: Return Grille |
| Temp Summer: | 75° (max) |
| Temp Winter: | 72° (min) |
| Room: | Dedicated Room Temperature control |
| Humidity Range: | 30% to 60% |
| Special Security: | N/A |

**DIV 26 - ELECTRICAL**

| Receptacles: | R-1: Receptacle, Standard duplex, all walls, spaced at 10′-0″ max Oc, min 1 / wall |
| Other Electrical Receptacles: | N/A |
| Electrical Special: | N/A |

**DIV 26 - LIGHTING**

| Lighting Fixture: | L-16: Light Fixture, Surface Mounted High Bay |
| Lighting Types Optional/Special: | N/A |
| Lighting Control: | LC-1: Light Switch |
| Lighting Special: | Provide 50 fc at floor level. |
DIV 10 - FURNISHINGS AND EQUIPMENT  Chapter 14
Furnishings and Equipment 1:

Furnishings and Equipment 2:

Furnishings and Equipment 3:

OTHER REQUIREMENTS
Number of storage cages determined by POR. Doors: 2 (entrance and exit) Overhead roll-up metal door and frame 15’ wide X 16’ 6” high (for forklift access) with balanced magnetic switch attached to bottom of door. Door is dual slat with 12, 14 or 16 gauge for exterior slats and 18, 20, 22 or 24 gauge for insulated interior slats. Ensure slide bolts are 6” from above floor and able to accommodate a high security padlock. Provide electric motor system with manual override. Door must allow ease of manual operation from floor level. Secure chain area with eyebolt for a high security padlock. The electric control buttons and the manual override feature will be located so that they cannot be reached by cutting a hole through the door. The door is to be 15’ from one side of the building. Windows: clerestory, if provide Sliding or swinging gate/door in wire mesh partitions. Gate/door height and width to suit forklift accessibility

DIV 27 - COMMUNICATIONS  Chapter 20
Phone Outlets: N/A
Data Outlets: N/A
Communications Special

DIV 28 - SECURITY  Chapter 21
CCTV Camera: Fixed CCTV wide-angle lens camera, monitored at CCC.
IDS: IDS & Alarm, UPS, Keypad control inside, adjacent to door, HSS-2
Access Control: Two factor, APL-listed card reader
Duress System: Mushroom Duress button, wall mounted
Security Special Requirements:

DIV 27 - COMMUNICATIONS

DIV 28 - SECURITY

SCHEMATIC PLAN

Cargo Detention Area

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The enforcement tool room is designed to store various tools and equipment used to support inspections. The enforcement tool room is located within the secondary inspection area.

<table>
<thead>
<tr>
<th>DIV 08 - DOORS AND WINDOWS</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Type:</td>
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</tr>
<tr>
<td>Door Frame:</td>
<td>HM-1 Interior, 12 gauge hollow metal, fully welded</td>
</tr>
<tr>
<td>Door Lockset Group:</td>
<td>B Mortise Lever Lockset w/ Thumb Turn - Entrance Function</td>
</tr>
<tr>
<td>Door Hardware Cylinder:</td>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
</tr>
<tr>
<td>Door Hardware Group:</td>
<td>B Automatic Door Bottom, D Door Stop, E Door Threshold</td>
</tr>
<tr>
<td>Interior Window:</td>
<td></td>
</tr>
<tr>
<td>Exterior Windows:</td>
<td></td>
</tr>
<tr>
<td>Exterior Window / Door Glazing:</td>
<td></td>
</tr>
<tr>
<td>Special Requirements:</td>
<td>Alt. door: wood, full flush, solid core, 5 layers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 09 - CONSTRUCTION AND FINISHES</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic Separation:</td>
<td>STC 45: Minimum sound isolation</td>
</tr>
<tr>
<td>Floor Finish:</td>
<td>FF-04 VCT</td>
</tr>
<tr>
<td>Base:</td>
<td>BF-01 Rubber Base, 4&quot; H</td>
</tr>
<tr>
<td>Wall Construction:</td>
<td>Wall-02 Gypsum Board on Metal Stud, Sound Insulation</td>
</tr>
<tr>
<td>Wall Finish:</td>
<td>WF-01: Gypsum Board, 5/8&quot; Regular, Painted</td>
</tr>
<tr>
<td>Ceiling Const. / Finish:</td>
<td>CF-01: Gypsum Board, 5/8&quot; Regular, Painted</td>
</tr>
<tr>
<td>Ceiling Remark:</td>
<td></td>
</tr>
<tr>
<td>Ceiling Height:</td>
<td>9’ min</td>
</tr>
<tr>
<td>Alternate Construction:</td>
<td></td>
</tr>
<tr>
<td>Const Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<tr>
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<th>Chapter 14</th>
</tr>
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<tbody>
<tr>
<td>Fixed Equipment 1:</td>
<td>Metal Shelving, Extra Heavy Duty, 5 shelf, 24&quot; x 36&quot; x 85&quot;H</td>
</tr>
<tr>
<td>Fixed Equipment 2:</td>
<td>Wall Cabinets, Work Counter, Cabinets below</td>
</tr>
<tr>
<td>Fixed Equipment 3:</td>
<td>Counters and cabinets shall be constructed of a solid material specified for high durability.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 21 - FIRE SUPPRESSION</th>
<th>Chapter 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprinkler Head Type:</td>
<td>SPKLR-01 Pendant</td>
</tr>
<tr>
<td>Fire Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

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<tr>
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</tr>
</thead>
<tbody>
<tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 5:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 6:</td>
<td></td>
</tr>
<tr>
<td>Plumbing Special</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<tbody>
<tr>
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</tr>
<tr>
<td>Return Register:</td>
<td>RR-2: Return Grille</td>
</tr>
<tr>
<td>Temp Summer:</td>
<td>75° (max)</td>
</tr>
<tr>
<td>Temp Winter:</td>
<td>72° (min)</td>
</tr>
<tr>
<td>Temp Control:</td>
<td>T-1: Flush Mounted Wall Temp Sensor</td>
</tr>
<tr>
<td>Humidity Range:</td>
<td>30%-60%</td>
</tr>
<tr>
<td>Special Security:</td>
<td></td>
</tr>
<tr>
<td>Mech Special Requirements:</td>
<td>S-1, S-4, RR-1 registers are options</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 26 - ELECTRICAL</th>
<th>Chapter 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptacles:</td>
<td>R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0&quot; max OC, min 1 / wall</td>
</tr>
<tr>
<td>Other Electrical Receptacles:</td>
<td></td>
</tr>
<tr>
<td>Electrical Special:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 26 - LIGHTING</th>
<th>Chapter 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting Fixture:</td>
<td>L-1A: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 85+ CRI Lamp</td>
</tr>
<tr>
<td>Fixture Types Optional/Special:</td>
<td></td>
</tr>
<tr>
<td>Lighting Control:</td>
<td>LC-4: Combination Wall Switch with Occupancy Sensor</td>
</tr>
<tr>
<td>Lighting Special:</td>
<td>Provide 50 FC at work surface</td>
</tr>
</tbody>
</table>
### DIV 10 - FURNISHINGS AND EQUIPMENT  
**Chapter 14**

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Tool Storage Container, lockable and Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td>Telephone</td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

### DIV 27 - COMMUNICATIONS  
**Chapter 20**

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>Phone 06 RJ-45 phone port, 1 per wall minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>Data 05: Data port, 1 per wall minimum</td>
</tr>
<tr>
<td>Communications Special</td>
<td></td>
</tr>
</tbody>
</table>

### DIV 28 - SECURITY  
**Chapter 21**

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>Fixed CCTV wide-angle lens camera, monitored at CCC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td></td>
</tr>
<tr>
<td>Access Control:</td>
<td>Two factor, APL-listed card reader, DPS</td>
</tr>
<tr>
<td>Duress System</td>
<td></td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

#### DIV 10 - FURNISHINGS AND EQUIPMENT

#### DIV 27 - COMMUNICATIONS

#### DIV 28 - SECURITY

#### SCHEMATIC PLAN

**Enforcement Tool Room**

- Counter w/ Base and Upper Cabinets
- Heavy Duty Shelving
- Counter w/ Base Cabinets
- Wall Mounted Telephone
- Camera
- Lockable Metal Storage Cabinet
- Access Control/ Card Reader

---

**CFDS – 2019 – ROOM DATA SHEETS**

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Secured storage room for personal protective equipment and supplies. One room is required and must be provided. Personal Protective Equipment Storage is located in close proximity to the inspection area.

### 1.0 INSPECTION SUPPORT SPACES

#### DIV 08 - DOORS AND WINDOWS

<table>
<thead>
<tr>
<th>Door Type</th>
<th>B-B-01 Hollow Metal, Full flush, seamless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Frame</td>
<td>HM-1 Interior, 12 gauge hollow metal, fully welded</td>
</tr>
<tr>
<td>Door Lockset Group</td>
<td>N Electrified Mortise Lock with Lever set and built-in REX function &amp; key override</td>
</tr>
<tr>
<td>Door Hardware Cylinder</td>
<td>A-2: Cylinder, keyed individually NOT under a CBP Master</td>
</tr>
<tr>
<td>Door Hardware Group</td>
<td>B Automatic Door Bottom, D Door Stop, K Automatic Door Closer, X Power Transfer Hinge</td>
</tr>
<tr>
<td>Interior Window</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Windows</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing</td>
<td>N/A</td>
</tr>
<tr>
<td>Special Requirements</td>
<td>J - Non-removable hinges if out-swing door</td>
</tr>
</tbody>
</table>

#### DIV 09 - CONSTRUCTION AND FINISHES

<table>
<thead>
<tr>
<th>Acoustic Separation</th>
<th>No Special Acoustical Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor Finish</td>
<td>FF-03 Concrete, troweled, uniform texture and appearance, sealed</td>
</tr>
<tr>
<td>Base</td>
<td>BF-01 Rubber Base, 4” H</td>
</tr>
<tr>
<td>Wall Construction</td>
<td>Wall-03 Gypsum Board on #9(10 Ga) Expanded Metal Mesh on Stud, Sound Insulation</td>
</tr>
<tr>
<td>Wall Finish</td>
<td>WF-13: Paint, Semi-gloss</td>
</tr>
<tr>
<td>Ceiling Const. / Finish</td>
<td>CF-02: 5/8” Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted</td>
</tr>
<tr>
<td>Ceiling Remark</td>
<td></td>
</tr>
<tr>
<td>Ceiling Height</td>
<td>9’ min</td>
</tr>
<tr>
<td>Alternate Construction</td>
<td>8” CMU- secure- vertical rebar at 16” OC (every block), fully grouted</td>
</tr>
<tr>
<td>Const Special Requirements</td>
<td>Install of 9ga metal mesh wall/ceiling reinforcement must be inspected by CBP prior to cover</td>
</tr>
</tbody>
</table>

#### DIV 10 - FIXED EQUIPMENT

<table>
<thead>
<tr>
<th>Fixed Equipment 1</th>
<th>Metal Shelving, Heavy Duty, 5 shelf, 18” x 36” x 85”H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Equipment 2</td>
<td>GSA Class V Safe, minimum of two drawers, FF-L-2740B lock on each drawer</td>
</tr>
<tr>
<td>Fixed Equipment 3</td>
<td></td>
</tr>
</tbody>
</table>

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DIV 10 - FURNISHINGS AND EQUIPMENT  Chapter 14
Furnishings and Equipment 1: Stainless Steel Work Table
Furnishings and Equipment 2: 
Furnishings and Equipment 3: 

OTHER REQUIREMENTS
Wall/ ceiling: If #9 (10 Ga) Expanded Metal Mesh in wall are anchored slab to slab, then #9 (10 Ga) Expanded Metal Mesh is not required in the ceiling.

DIV 27 - COMMUNICATIONS  Chapter 20
Phone Outlets: N/A
Data Outlets: N/A
Communications Special

DIV 28 - SECURITY  Chapter 21
CCTV Camera: Fixed CCTV wide-angle lens camera, monitored at CCC.
IDS: IDS & Alarm, UPS, Keypad control inside, adjacent to door, HSS-2
Access Control: Two factor, APL-listed card reader
Duress System: N/A
Security Special Requirements: 

SCHEMATIC PLAN
Personal Protective Equipment (PPE) Storage  CRG-01-13

Heavy Duty Metal Shelving
GSA Approved Class V Safe
IDS Sensor
IDS Keypad
Access Control/ Card Reader
Camera

Personal Protective Equipment (PPE) Storage  CRG-01-13

CFDS – 2019 – ROOM DATA SHEETS

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### APHIS/ VS/ Bird Holding

Animal and Plant Health Inspection Services (APHIS)/ Veterinary Services (VS)/ Bird Holding. Wildlife is temporarily held in this space while awaiting transfer to a bird quarantine facility if necessary. Bird holding space must be configured to prevent birds from coming into contact with each other. One Bird Holding area is required and located adjacent to the Agriculture Lab. Square footage determined by size of operation.

### 1.0 INSPECTION SUPPORT SPACES

#### RECIPROCITY

<table>
<thead>
<tr>
<th>DIV 08 - DOORS AND WINDOWS</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Door Type:</strong></td>
<td></td>
</tr>
<tr>
<td>B-B-01  Hollow Metal, Full flush, seamless</td>
<td></td>
</tr>
<tr>
<td><strong>Door Frame:</strong></td>
<td></td>
</tr>
<tr>
<td>HM-1  Interior, 12 gauge hollow metal, fully welded</td>
<td></td>
</tr>
<tr>
<td><strong>Door Lockset Group:</strong></td>
<td></td>
</tr>
<tr>
<td>N  Electrified Mortise Lock with Lever set and built-in REX function &amp; key override</td>
<td></td>
</tr>
<tr>
<td><strong>Door Hardware Cylinder:</strong></td>
<td></td>
</tr>
<tr>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
<td></td>
</tr>
<tr>
<td><strong>Door Hardware Group:</strong></td>
<td></td>
</tr>
<tr>
<td>B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer</td>
<td></td>
</tr>
<tr>
<td><strong>Interior Window:</strong></td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

**DIV 09 - CONSTRUCTION AND FINISHES**

| **Acoustic Separation:**        | STC 55: Excellent |
| **Floor Finish:**               | FF-10  Seamless epoxy-resin flooring system, slope to Floor drain(s). |
| **Base:**                       | BF-04  Integral with seamless flooring, 8” H |
| **Wall Construction:**          | Wall-08 CMU - 8” |
| **Wall Finish:**                | N/A N/A |
| **Ceiling Const. / Finish:**    | CF-07  Gypsum Board, 5/8” Moisture Resistant, Painted |
| **Ceiling Height:**             | 9’ min |
| **Alternate Construction:**     |            |

**DIV 10 - FIXED EQUIPMENT**

| **Fixed Equipment 1:**          |            |
| **Fixed Equipment 2:**          |            |
| **Fixed Equipment 3:**          | Provide stainless steel table 30” high to support bird containers above floor level, different sizes. |

---

**DIV 21 - FIRE SUPPRESSION**

| **Fire Special Requirements:** |
| SPKLR-08 Semi-Recessed Pendant |

**DIV 22 - PLUMBING**

<table>
<thead>
<tr>
<th><strong>Fixtures and Fittings:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>FD-1: Floor Drains - Finished Area</td>
</tr>
<tr>
<td>HB-1: Hose and Supply Boxes - Hose Valve - Bent Nose</td>
</tr>
<tr>
<td>MS-1: Service / Mop Sink - Two Handle Faucet</td>
</tr>
<tr>
<td>FC-3 Wall Mounted Two handle faucet</td>
</tr>
<tr>
<td>WC-1: Floor Mounted Toilet - For Flush Valve</td>
</tr>
<tr>
<td>SH-1 Shower Valve, Head and Handshower</td>
</tr>
<tr>
<td>SK-2: Countertop Mount Sink - Two Handle Faucet</td>
</tr>
</tbody>
</table>

**DIV 23 - MECHANICAL**

| **Mech Special Requirements:** |
| See Other Requirements, Mechanical |

**DIV 26 - ELECTRICAL**

| **Other Electrical Receptacles:** |
| R-1: Receptacle, Standard duplex, all walls, spaced at 10’-0” max OC, min 1 / wall |

| **Electrical Special:** |
| Provide two (2) 240VAC outlets for Washer and Dryer. All outlets are GFCI |

**DIV 26 - LIGHTING**

| **Lighting Fixture:** |
| L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens |
| L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens |

| **Lighting Control:** |
| LC-1: Light Switch |

**Lighting Special**

Provide 30 FC on floor.
Furnishings and Equipment 1: Laboratory equipment

Furnishings and Equipment 2: Washer / Dryer, Full size Stacking

Furnishings and Equipment 3:

OTHER REQUIREMENTS

DOOR: Full door perimeter seal required.

Mechanical Notes:
1. Special ventilation and filtering required for bird quarantine areas. Special HVAC requirements include use of independent mechanical equipment in bird holding areas capable of providing continuous 24 hour air operation.
2. Exhaust air must not be mixed with the return air of other spaces. The use of high efficiency particulate air (HEPA) filter is recommended.
3. Duct systems in animal holding areas must be aluminum to prevent corrosion.
4. Exhaust air must not be mixed with the return air of other spaces. The use of high efficiency particulate air (HEPA) filter is recommended.

Exterior Windows: Operable windows with double glazing in metal frames. Set sill height at a minimum of 6’ AFF. Wire mesh barriers required for operable units.

NEGATIVE PRESSURE:

1. Room Exhaust air, 10 Air changes min. Provide snorkel exhaust at counter.

DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14

DIV 27 - COMMUNICATIONS Chapter 20

DIV 28 - SECURITY Chapter 21

DIV 28 - SECURITY

CCTV Camera: N/A
IDS: N/A
Access Control: Two factor, APL-listed card reader, DPS
Duress System: N/A

NOT TO SCALE

For Reference Purposes Only
This area provides access for members of the cargo facility staff, the brokerage, and members of the trade, to the CBP operational support areas.

### DIV 06 - DOORS AND WINDOWS

<table>
<thead>
<tr>
<th>Room Function</th>
<th>Room Code: CRG-02-01</th>
<th>2.0 OPERATIONAL SUPPORT SPACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception Area</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DIV 08 - DOORS AND WINDOWS**

<table>
<thead>
<tr>
<th>Door Type</th>
<th>Door Frame</th>
<th>Door Lockset Group</th>
<th>Door Hardware Group</th>
<th>Interior Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD-STD-01.01, Revision G (Amended) (Opaque) 5 min FE</td>
<td>Formed, reinforced and welded steel.</td>
<td>G FF-L-2890B Rated High Security Electromechanical Lock (X-10 or equivalent)</td>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
<td>Transaction window, Level 3 bullet resistant, SS speaker port or baffle frame</td>
</tr>
</tbody>
</table>

**DIV 09 - CONSTRUCTION AND FINISHES**

<table>
<thead>
<tr>
<th>Acoustical Separation</th>
<th>Floor Finish</th>
<th>Base</th>
<th>Wall Construction</th>
<th>Wall Finish</th>
<th>Ceiling Const./Finish:</th>
</tr>
</thead>
</table>

**DIV 10 - FIXED EQUIPMENT**

<table>
<thead>
<tr>
<th>Fixed Equipment 1</th>
<th>Fixed Equipment 2</th>
<th>Fixed Equipment 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail Boxes, Work Counter, Cabinets below</td>
<td></td>
<td>Provide multi-slot unit with compartments approx. 12”W x 12” D x 4” H. Verify quantity with facility</td>
</tr>
</tbody>
</table>

### Room Size: 125 SF

- **Room Occupancy:** 1 Staff
- **Room Function:** Reception Area
- **Room Code:** CRG-02-01
- **Date:** 10/23/2018

**DIV 21 - FIRE SUPPRESSION**

<table>
<thead>
<tr>
<th>Sprinkler Head Type</th>
<th>Fire Special Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPKLR-06 Concealed Recessed Pendant</td>
<td>None</td>
</tr>
</tbody>
</table>

**DIV 22 - PLUMBING**

<table>
<thead>
<tr>
<th>Fixtures and Fittings 1</th>
<th>Fixtures and Fittings 2</th>
<th>Fixtures and Fittings 3</th>
<th>Fixtures and Fittings 4</th>
<th>Fixtures and Fittings 5</th>
<th>Fixtures and Fittings 6</th>
<th>Fixtures and Fittings 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixtures and Fittings 1</td>
<td>Fixtures and Fittings 2</td>
<td>Fixtures and Fittings 3</td>
<td>Fixtures and Fittings 4</td>
<td>Fixtures and Fittings 5</td>
<td>Fixtures and Fittings 6</td>
<td>Fixtures and Fittings 7</td>
</tr>
</tbody>
</table>

**DIV 23 - MECHANICAL**

<table>
<thead>
<tr>
<th>Supply Register</th>
<th>Return Register</th>
<th>Temp Summer</th>
<th>Temp Winter</th>
<th>Temp Control</th>
<th>Humidity Range</th>
<th>Special Security</th>
<th>Mech Special Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>75° (max)</td>
<td>72° (min)</td>
<td></td>
<td>30% to 60%</td>
<td></td>
<td>Refer to General Work Area for room requirements</td>
</tr>
</tbody>
</table>

**DIV 26 - ELECTRICAL**

<table>
<thead>
<tr>
<th>Other Electrical Receptacles</th>
<th>Electrical Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

**DIV 26 - LIGHTING**

<table>
<thead>
<tr>
<th>Lighting Fixture</th>
<th>Lighting Control</th>
<th>Lighting Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-15: Lighting Fixture, Surface Mounted Task Light</td>
<td>LC-9: Individual control for task light</td>
<td>Refer to General Work Area for room requirements</td>
</tr>
</tbody>
</table>

**DIV 26 - LIGHTING**

<table>
<thead>
<tr>
<th>Lighting Fixture</th>
<th>Lighting Control</th>
<th>Lighting Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-15: Lighting Fixture, Surface Mounted Task Light</td>
<td>LC-9: Individual control for task light</td>
<td>Refer to General Work Area for room requirements</td>
</tr>
</tbody>
</table>
DIV 10 - FURNISHINGS AND EQUIPMENT | Chapter 14
---
**Furnishings and Equipment 1:**
Commercial Grade Waiting Seating (Ganged)

**Furnishings and Equipment 2:**
Literature rack, Lounge Chair

**Furnishings and Equipment 3:**

---
**DIV 27 - COMMUNICATIONS | Chapter 20**

**Phon Outlets:** N/A

**Data Outlets:** N/A

**Communications Special Requirements:**

---
**DIV 28 - SECURITY | Chapter 21**

**CCTV Camera:** Fixed CCTV wide-angle lens camera, monitored at CCC.

**IDS:** N/A

**Access Control:** Two factor, APL-listed card reader, DPS

**Duress System:** N/A

**Security Special Requirements:**

---
**OTHER REQUIREMENTS**

Bullet Resistant Protection shall be provided, see Chapter 21 for additional security details.

Installation of #9 (10 Ga) expanded metal wall/ceiling reinforcement must be inspected by CBP prior to covering.

CBP prefers through-wall boxes that are open into the Staff work area and the locked mailbox doors open into the Broker public area.

---
**SCHEMATIC PLAN**

*Public/Broker Waiting Area*

---

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<table>
<thead>
<tr>
<th>DIV 08 - DOORS AND WINDOWS</th>
<th>DIV 21 - FIRE SUPPRESSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Type: A-A Wood, Full flush, Solid core, 5 layers</td>
<td>Fire Special Requirements: None</td>
</tr>
<tr>
<td>Door Frame: HM-1 Interior, 12 gauge hollow metal, fully welded</td>
<td></td>
</tr>
<tr>
<td>Door Lockset Group: B Mortise Lever Lockset w/ Thumb Turn - Entrance Function</td>
<td></td>
</tr>
<tr>
<td>Door Hardware Cylinder: A-1: Cylinder, keyed individually under a CBP Master</td>
<td></td>
</tr>
<tr>
<td>Door Hardware Group: B Automatic Door Bottom, D Door Stop, E Door Threshold</td>
<td></td>
</tr>
<tr>
<td>Interior Window: N/A</td>
<td></td>
</tr>
<tr>
<td>Exterior Windows: N/A</td>
<td></td>
</tr>
<tr>
<td>Exterior Window / Door Glazing:</td>
<td></td>
</tr>
<tr>
<td>Special Requirements: Alt. Door, B-B Hollow Metal</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 22 - PLUMBING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixtures and Fittings 1: N/A</td>
</tr>
<tr>
<td>Fixtures and Fittings 2:</td>
</tr>
<tr>
<td>Fixtures and Fittings 3:</td>
</tr>
<tr>
<td>Fixtures and Fittings 4:</td>
</tr>
<tr>
<td>Fixtures and Fittings 5:</td>
</tr>
<tr>
<td>Fixtures and Fittings 6:</td>
</tr>
<tr>
<td>Plumbing Special</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 09 - CONSTRUCTION AND FINISHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic Separation: N/A</td>
</tr>
<tr>
<td>Floor Finish: FF-09 Carpet Tile</td>
</tr>
<tr>
<td>Base: BF-01 Rubber Base, 4&quot; H</td>
</tr>
<tr>
<td>Wall Construction: Wall-02 Gypsum Board on Metal Stud, Sound Insulation</td>
</tr>
<tr>
<td>Wall Finish: WF-01: Gypsum Board, 5/8&quot; Regular, Painted</td>
</tr>
<tr>
<td>Ceiling Const. / Finish: CF-03: Acoustic Ceiling Tile, Suspended</td>
</tr>
<tr>
<td>Ceiling Remark:</td>
</tr>
<tr>
<td>Ceiling Height: 9' min</td>
</tr>
<tr>
<td>Alternate Construction:</td>
</tr>
<tr>
<td>Const Special Requirements:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 10 - FIXED EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Equipment 1: 80 SF Workstation</td>
</tr>
<tr>
<td>Fixed Equipment 2:</td>
</tr>
<tr>
<td>Fixed Equipment 3:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 23 - MECHANICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Register: S-2: Square Ceiling Diffuser</td>
</tr>
<tr>
<td>Return Register: RR-2: Return Grille</td>
</tr>
<tr>
<td>Temp Summer: 75° (max)</td>
</tr>
<tr>
<td>Temp Winter: 72° (min)</td>
</tr>
<tr>
<td>Temp Control: T-1: Flush Mounted Wall Temp Sensor</td>
</tr>
<tr>
<td>Humidity Range: 30% to 60%</td>
</tr>
<tr>
<td>Special Security: Mech Special Requirements: S-1, 4, RR-1 registers are options</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 26 - ELECTRICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptacles: R-1: Receptacle, Standard duplex, all walls, spaced at 10'- D&quot; max Oc, min 1 / wall</td>
</tr>
<tr>
<td>Other Electrical Receptacles:</td>
</tr>
<tr>
<td>Electrical Special:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 26 - LIGHTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting Fixture: L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp</td>
</tr>
<tr>
<td>Fixture Types Optional/Special: L-15: Lighting Fixture, Surface Mounted Task Light</td>
</tr>
<tr>
<td>Lighting Control: LC-9: Individual control for task light</td>
</tr>
<tr>
<td>Lighting Special:</td>
</tr>
</tbody>
</table>
For Official Use Only

**DIV 10 - FURNISHINGS AND EQUIPMENT**  
**Chapter 14**

**Furnishings and Equipment 1:** Lounge Chair, Side (guest) Chair(s), Task Chair

**Furnishings and Equipment 2:** Computer, printer, telephone, Literature rack

**Furnishings and Equipment 3:** Wardrobe, lockable, 48" tall (minimum)

**OTHER REQUIREMENTS**

Workstation Includes:
- Wardrobe Cabinet
- Lateral File below countertop
- Transaction Counter at one side

Bullet Resistant Protection shall be provided, see Chapter 21 for additional security details.

All components and systems furniture in workstations are to be keyed individually under a master key.

**DIV 27 - COMMUNICATIONS**  
**Chapter 20**

**Phone Outlets:** Phone 06 RJ-45 phone port, 1 per wall minimum

**Data Outlets:** Data 05: Data port, 1 per wall minimum

**Communications Special**

**DIV 28 - SECURITY**  
**Chapter 21**

**CCTV Camera:** Fixed CCTV wide-angle lens camera, monitored at CCC.

**IDS:** N/A

**Access Control:** Pushbutton release for controlled entry, DPS

**Duress System:** Duress pushbutton, concealed from public view, hardware to prevent accidental activation

**Security Special Requirements:** Door release button at transaction window to control access. Two factor APL-Listed Card Reader, DPS

**SCHEMATIC PLAN**

**Public/ Broker Reception Workstation**

**DIV 28 - SECURITY**

- **CCTV Camera:** Fixed CCTV wide-angle lens camera, monitored at CCC
- **IDS:** N/A
- **Access Control:** Pushbutton release for controlled entry, DPS
- **Duress System:** Duress pushbutton, concealed from public view, hardware to prevent accidental activation
- **Security Special Requirements:** Door release button at transaction window to control access. Two factor APL-Listed Card Reader, DPS

**WORKSTATION INCLUDES:**
- Wardrobe Cabinet
- Lateral File below countertop
- Transaction Counter at one side

**Bullet Resistant Protection shall be provided, see Chapter 21 for additional security details.**

All components and systems furniture in workstations are to be keyed individually under a master key.

**DIV 10 - FURNISHINGS AND EQUIPMENT**

**Furnishings and Equipment 1:**
- Lounge Chair, Side (guest) Chair(s), Task Chair

**Furnishings and Equipment 2:**
- Computer, printer, telephone, Literature rack

**Furnishings and Equipment 3:**
- Wardrobe, lockable, 48" tall (minimum)

**OTHER REQUIREMENTS**

Workstation Includes:
- Wardrobe Cabinet
- Lateral File below countertop
- Transaction Counter at one side

Bullet Resistant Protection shall be provided, see Chapter 21 for additional security details.

All components and systems furniture in workstations are to be keyed individually under a master key.

**DIV 27 - COMMUNICATIONS**

**Phone Outlets:**
- Phone 06 RJ-45 phone port, 1 per wall minimum

**Data Outlets:**
- Data 05: Data port, 1 per wall minimum

**Communications Special**

**DIV 28 - SECURITY**

**CCTV Camera:**
- Fixed CCTV wide-angle lens camera, monitored at CCC

**IDS:**
- N/A

**Access Control:**
- Pushbutton release for controlled entry, DPS

**Duress System:**
- Duress pushbutton, concealed from public view, hardware to prevent accidental activation

**Security Special Requirements:**
- Door release button at transaction window to control access. Two factor APL-Listed Card Reader, DPS

**SCHEMATIC PLAN**

**Public/ Broker Reception Workstation**

**WORKSTATION INCLUDES:**
- Wardrobe Cabinet
- Lateral File below countertop
- Transaction Counter at one side

**Bullet Resistant Protection shall be provided, see Chapter 21 for additional security details.**

All components and systems furniture in workstations are to be keyed individually under a master key.

**DIV 10 - FURNISHINGS AND EQUIPMENT**

**Furnishings and Equipment 1:**
- Lounge Chair, Side (guest) Chair(s), Task Chair

**Furnishings and Equipment 2:**
- Computer, printer, telephone, Literature rack

**Furnishings and Equipment 3:**
- Wardrobe, lockable, 48" tall (minimum)

**OTHER REQUIREMENTS**

Workstation Includes:
- Wardrobe Cabinet
- Lateral File below countertop
- Transaction Counter at one side

Bullet Resistant Protection shall be provided, see Chapter 21 for additional security details.

All components and systems furniture in workstations are to be keyed individually under a master key.

**DIV 27 - COMMUNICATIONS**

**Phone Outlets:**
- Phone 06 RJ-45 phone port, 1 per wall minimum

**Data Outlets:**
- Data 05: Data port, 1 per wall minimum

**Communications Special**

**DIV 28 - SECURITY**

**CCTV Camera:**
- Fixed CCTV wide-angle lens camera, monitored at CCC

**IDS:**
- N/A

**Access Control:**
- Pushbutton release for controlled entry, DPS

**Duress System:**
- Duress pushbutton, concealed from public view, hardware to prevent accidental activation

**Security Special Requirements:**
- Door release button at transaction window to control access. Two factor APL-Listed Card Reader, DPS
The Port Director's Office is dedicated for the use by CBP Port Director (PD) to conduct day-to-day operations of the cargo facility. The office is used for small meetings that include: i.e., cargo facility operations with staff, cargo representatives, or other U.S. government representatives, as required. The office shall have electrical, telephone, and data drops with LAN and Enforce System connectivity. This office shall be adjacent to the open office work area and Assistant Port Director's Office. One space is required if the PD position is authorized.

### DIV 08 - DOORS AND WINDOWS

<table>
<thead>
<tr>
<th>DIV 08 - DOORS AND WINDOWS</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Type</td>
<td>B-B-01</td>
</tr>
<tr>
<td>Door Frame</td>
<td>HM-1</td>
</tr>
<tr>
<td>Door Lockset Group</td>
<td>N</td>
</tr>
<tr>
<td>Door Hardware Cylinder</td>
<td>A-1:</td>
</tr>
<tr>
<td>Door Hardware Group</td>
<td>B</td>
</tr>
<tr>
<td>Exterior Window</td>
<td>Aluminum Framed Windows</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing</td>
<td>GL-06 Laminated, Mirrored, (one-way) glazing</td>
</tr>
<tr>
<td>Special Requirements</td>
<td>Door Hardware: X. Power Transfer Hinge</td>
</tr>
</tbody>
</table>

### DIV 09 - CONSTRUCTION AND FINISHES

<table>
<thead>
<tr>
<th>DIV 09 - CONSTRUCTION AND FINISHES</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic Separation</td>
<td>STC 45: Minimum sound isolation</td>
</tr>
<tr>
<td>Floor Finish</td>
<td>FF-09 Carpet Tile</td>
</tr>
<tr>
<td>Base</td>
<td>BF-01 Rubber Base</td>
</tr>
<tr>
<td>Wall Construction</td>
<td>Wall-02 Gypsum Board on Metal Stud, Sound Insulation</td>
</tr>
<tr>
<td>Wall Finish</td>
<td>WF-01: Gypsum Board, 5/8&quot; Regular, Painted</td>
</tr>
<tr>
<td>Ceiling Const. / Finish</td>
<td>CF-01: Gypsum Board, 5/8&quot; Regular, Painted</td>
</tr>
<tr>
<td>Ceiling Height</td>
<td>9' min</td>
</tr>
<tr>
<td>Alternate Construction</td>
<td>Acoustic Tile permitted if walls go slab to slab or in conjunction with CF-01</td>
</tr>
<tr>
<td>Const Special Requirements</td>
<td>Mini-blinds at windows</td>
</tr>
</tbody>
</table>

### DIV 10 - FIXED EQUIPMENT

<table>
<thead>
<tr>
<th>DIV 10 - FIXED EQUIPMENT</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Equipment 1</td>
<td></td>
</tr>
<tr>
<td>Fixed Equipment 2</td>
<td></td>
</tr>
<tr>
<td>Fixed Equipment 3</td>
<td>See in &quot;Other Requirements&quot;</td>
</tr>
</tbody>
</table>

### DIV 21 - FIRE SUPPRESSION

<table>
<thead>
<tr>
<th>DIV 21 - FIRE SUPPRESSION</th>
<th>Chapter 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprinkler Head Type</td>
<td>SPKL-06 Concealed Recessed Pendant</td>
</tr>
<tr>
<td>Fire Special Requirements</td>
<td>None</td>
</tr>
</tbody>
</table>

### DIV 22 - PLUMBING

<table>
<thead>
<tr>
<th>DIV 22 - PLUMBING</th>
<th>Chapter 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixtures and Fittings 1</td>
<td>N/A</td>
</tr>
<tr>
<td>Fixtures and Fittings 2</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 3</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 4</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 5</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 6</td>
<td></td>
</tr>
</tbody>
</table>

### DIV 23 - MECHANICAL

<table>
<thead>
<tr>
<th>DIV 23 - MECHANICAL</th>
<th>Chapter 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Register</td>
<td>S-2: Square Ceiling Diffuser</td>
</tr>
<tr>
<td>Return Register</td>
<td>RR-2: Return Grille</td>
</tr>
<tr>
<td>Temp Summer</td>
<td>75° (max)</td>
</tr>
<tr>
<td>Temp Winter</td>
<td>72° (min)</td>
</tr>
<tr>
<td>Humidity Range</td>
<td>30% to 60%</td>
</tr>
<tr>
<td>Mech Special Requirements</td>
<td>S- 1, 4, RR- 1 registers are options</td>
</tr>
</tbody>
</table>

### DIV 26 - ELECTRICAL

<table>
<thead>
<tr>
<th>DIV 26 - ELECTRICAL</th>
<th>Chapter 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptacles</td>
<td>R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0&quot; max Oc, min 1 / wall</td>
</tr>
<tr>
<td>Electrical Special Receptacles</td>
<td>Coordinate receptacles with furniture.</td>
</tr>
</tbody>
</table>

### DIV 26 - LIGHTING

<table>
<thead>
<tr>
<th>DIV 26 - LIGHTING</th>
<th>Chapter 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting Fixture</td>
<td>L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp</td>
</tr>
<tr>
<td>Lighting Control</td>
<td>LC-4: Combination Wall Switch with Occupancy Sensor</td>
</tr>
<tr>
<td>Lighting Special</td>
<td>Provide 40 FC at working surface, L-15 Task or L-13 under cabinet lighting at desk.</td>
</tr>
</tbody>
</table>
### DIV 10 - FURNISHINGS AND EQUIPMENT

**Furnishings and Equipment 1:** Computer(s), printer, telephone, Facsimile

**Furnishings and Equipment 2:** Ex. Desk, Return & Task Chair, Bookcase, Security Workstation

**Furnishings and Equipment 3:** Chair(s), Small Conf table w/ 4 chairs, Wardrobe, lockable, 48” tall (minimum)

### OTHER REQUIREMENTS

- **GSA Class V Safe**: Minimum of two drawers, FF-L-2740B lock on each drawer is optional.
- **IDS**: N/A
- **Access Control**: Two factor, APL-listed card reader, DPS
- **Duress System**: N/A
- **CCTV Camera**: N/A
- **Security Special Requirements**: Verify with Port Director location of Security Workstation.

### Phone Outlets:

- **Phone 06**: RJ-45 phone port, 1 per wall minimum

### Data Outlets:

- **Data 05**: Data port, 1 per wall minimum

### Communications Special

- (2) Phone outlets, one each at desk and credenza.

### DIV 27 - COMMUNICATIONS

- **Phone Outlets**: Phone 06, RJ-45 phone port, 1 per wall minimum
- **Data Outlets**: Data 05, Data port, 1 per wall minimum
- **Communications Special**: (2) Phone outlets, one each at desk and credenza.

### DIV 28 - SECURITY

- **CCTV Camera**: N/A
- **IDS**: N/A
- **Access Control**: Two factor, APL-listed card reader, DPS
- **Duress System**: N/A
- **Security Special Requirements**: Verify with Port Director location of Security Workstation.

### Furnishings and Equipment 1:

- Executive Desk, Return & Task Chair, Bookcase, Security Workstation

### Furnishings and Equipment 2:

- Chair(s), Small Conf table w/ 4 chairs, Wardrobe, lockable, 48” tall (minimum)

### Furnishings and Equipment 3:

- Computer(s), printer, telephone, Facsimile

---

**SCHEMATIC PLAN**

**Port Director's Office**

**CRG-02-03**
The Assistant Port Director's Office is used by the Assistant Port Director for day-to-day operations of the cargo facility. The office is used for small meetings that include: cargo facility operations with staff, cargo representatives, or other U.S. government representatives, as required. It is adjacent to the Port Director's Office, Operational Support Area, and the open office work area. One space is required, per Assistant Port Director.

### DIV 08 - DOORS AND WINDOWS

<table>
<thead>
<tr>
<th>Door Type</th>
<th>B-B-01 Hollow Metal, Full flush, seamless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Frame</td>
<td>HM-1 Interior, 12 gauge hollow metal, fully welded</td>
</tr>
<tr>
<td>Door Lockset Group</td>
<td>N Electrified Mortise Lock with Lever set and built-in REX function &amp; key override</td>
</tr>
<tr>
<td>Door Hardware Group</td>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
</tr>
<tr>
<td>Door Hardware Group</td>
<td>B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer</td>
</tr>
<tr>
<td>Interior Window</td>
<td>Wood Framed interior Window, 1/4” tempered glazing</td>
</tr>
<tr>
<td>Exterior Windows</td>
<td>Window Ext 01 Aluminum Framed Windows, Steel reinforced</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing</td>
<td>GL-06 Laminated, Mirrored, (one-way) glazing</td>
</tr>
<tr>
<td>Special Requirements</td>
<td>See &quot;Other Requirements&quot;</td>
</tr>
</tbody>
</table>

### DIV 09 - CONSTRUCTION AND FINISHES

<table>
<thead>
<tr>
<th>Acoustic Separation</th>
<th>STC 45: Minimum sound isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor Finish</td>
<td>FF-09 Carpet Tile</td>
</tr>
<tr>
<td>Base</td>
<td>BF-01 Rubber Base</td>
</tr>
<tr>
<td>Wall Construction</td>
<td>Wall-02 Gypsum Board on Metal Stud, Sound Insulation</td>
</tr>
<tr>
<td>Wall Finish</td>
<td>WF-01: Gypsum Board, 5/8&quot; Regular, Painted</td>
</tr>
<tr>
<td>Ceiling Const. / Finish</td>
<td>CF-03: Acoustic Ceiling Tile, Suspended</td>
</tr>
<tr>
<td>Ceiling Height</td>
<td>9’ min</td>
</tr>
<tr>
<td>Alternate Construction</td>
<td>5/8&quot; Gypsum Ceiling, Painted.</td>
</tr>
<tr>
<td>Const Special Requirements</td>
<td>Mini-blinds at windows.</td>
</tr>
</tbody>
</table>

### DIV 10 - FIXED EQUIPMENT

| Fixed Equipment 1  |
| Fixed Equipment 2  |
| Fixed Equipment 3  |

### DIV 21 - FIRE SUPPRESSION

| Sprinkler Head Type | SPKL-06 Concealed Recessed Pendant |
| Fire Special Requirements | None |

### DIV 22 - PLUMBING

| Fixtures and Fittings 1 | N/A |
| Fixtures and Fittings 2 |
| Fixtures and Fittings 3 |
| Fixtures and Fittings 4 |
| Fixtures and Fittings 5 |
| Fixtures and Fittings 6 |
| Plumbing Special Requirements | None |

### DIV 23 - MECHANICAL

| Supply Register | S-2: Square Ceiling Diffuser |
| Return Register | RR-2: Return Grille |
| Temp Summer     | 75° (max) |
| Temp Winter     | 72° (min) |
| Temp Control    | T-1: Flush Mounted Wall Temperature Sensor |
| Humidity Range  | 30% to 60% |
| Mech Special Requirements | S-1, 4, RR-1 registers are options. |

### DIV 26 - ELECTRICAL

| Receptacles | R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall |
| Other Electrical Receptacles | Coordinate receptacles with furniture. |
| Electrical Special Requirements | Coordinate receptacles with furniture. |

### DIV 26 - LIGHTING

| Lighting Fixture | L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp |
| Lighting Fixture | L-7: Lighting Fixture, Recessed 6’ Downlight |
| Lighting Control | LC-4: Combination Wall Switch with Occupancy Sensor |
| Lighting Special Requirements | Provide 40 FC at working surface, L-15 Task or L-13 under cabinet lighting at desk. |
### Furnishings and Equipment

#### Furnishings and Equipment 1:
- Exec. Desk, Return & Task Chair, Bookcase, Credenza

#### Furnishings and Equipment 2:
- Security Workstation, Side (guest) Chair(s), Wardrobe, lockable, 48” tall (minimum)

#### Furnishings and Equipment 3:
- Computer, printer, telephone, Facsimile, Lockable key cabinet

### Security Requirements:
See "Other Requirements"

### Other Requirements

- **GSA Class V Safe**: Minimum of two drawers, FF-L-2740B lock on each drawer is optional. Security workstation optional.
- **Wood door**: A-A: Wood, full flush 36”Wx7’Hx1 3/4”T, solid core, 5 layer. Window where included lightly tint.
- **Door Hardware**: Power Transfer Hinge.
- **CCTV/duress system**: Requirement and location will be determined by SMD.

### Other Information

- **SCHEMATIC PLAN**
  - Assistant Port Director's Office

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**WARNING:** This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C.522). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with DHS policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid “need-to-know” without prior approval of an authorized DHS official.
The Chief CBP Officer provides supervisory functions for the first line supervisor and associated U.S. Customs and Border Protection officers (CBPOs). The Chief CBP Officer space is located within the CBP Operational Support area. It is adjacent to the CBPO work area. One is required, based on the peak shift, for the Chief CBP Officer.

### DIV 08 - DOORS AND WINDOWS

**Door Type:** B-B-01  Hollow Metal, Full flush, seamless  
**Door Frame:** HM-1  Interior, 12 gauge hollow metal, fully welded  
**Door Lockset Group:** N  Electrified Mortise Lock with Lever set and built-in REX function & key override  
**Door Hardware Group:** A-1: Cylinder, keyed individually under a CBP Master  
**Door Hardware:** B  Automatic Door Bottom, D  Door Stop, E  Door Threshold, K  Automatic Door Closer  
**Interior Window:** Hollow Metal Frame, Painted, 1/4" tempered glazing  
**Exterior Windows:** Aluminum Framed Windows, Steel reinforced  
**Exterior Window / Door Glazing:** GL-06  Laminated, Mirrored, (one-way) glazing  
**Special Requirements:** See "Other Requirements"  

### DIV 09 - CONSTRUCTION AND FINISHES

**Acoustic Separation:** STC 45: Minimum sound isolation  
**Floor Finish:** FF-09  Carpet Tile  
**Base:** BF-01  Rubber Base  
**Wall Construction:** Wall-02  Gypsum Board on Metal Stud, Sound Insulation  
**Wall Finish:** WF-01:  Gypsum Board, 5/8" Regular, Painted  
**Ceiling Const. / Finish:** CF-03:  Acoustic Ceiling Tile, Suspended  
**Ceiling Height:** 9' min  
**Alternate Construction:** 5/8" Gypsum Ceiling, Painted  
**Const Special Requirements:** Mini-blinds at windows. Windows, where included, lightly tinted  

### DIV 10 - FIXED EQUIPMENT

**Fixed Equipment 1:**  
**Fixed Equipment 2:**  
**Fixed Equipment 3:**  

### DIV 21 - FIRE SUPPRESSION

**Sprinkler Head Type:** SPKLR-08  Semi-Recessed Pendant  
**Fire Special Requirements:** None  

### DIV 22 - PLUMBING

**Fixtures and Fittings 1:** N/A  
**Fixtures and Fittings 2:**  
**Fixtures and Fittings 3:**  
**Fixtures and Fittings 4:**  
**Fixtures and Fittings 5:**  
**Fixtures and Fittings 6:**  
**Plumbing Special Requirements:** None  

### DIV 23 - MECHANICAL

**Supply Register:** S-2:  Square Ceiling Diffuser  
**Return Register:** RR-2:  Return Grille  
**Temp Summer:** 75° (max)  
**Temp Winter:** 72° (min)  
**Temp Control:** T-1:  Flush Mounted Wall Temperature Sensor  
**Humidity Range:** 30% to 60%  
**Special Security:** Mech Special Requirements:  
**S- 1, 4, RR- 1 registers are options.**  

### DIV 26 - ELECTRICAL

**Receptacles:** R-1:  Receptacle, Standard duplex, all walls, spaced at 10'- 0” max OC, min 1 / wall  
**Other Electrical Receptacles:**  
**Electrical Special Requirements:** None  

### DIV 26 - LIGHTING

**LED Lighting Fixtures:** L-1:  Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp  
**LED Fixtures Types Optional/Special:** L-7:  Lighting Fixture, Recessed 6" Downlight  
**LED Lighting Control:** LC-4:  Combination Wall Switch with Occupancy Sensor  
**LED Lighting Special Requirements:** Provide 40 FC at working surface, L-15 Task or L-13 under cabinet lighting at desk.
### Furnishings and Equipment

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Computer(s), printer, telephone, Facsimile, Security Workstation</td>
</tr>
<tr>
<td>2</td>
<td>Exec. Desk, Return &amp; Task Chair, Chair(s), Credenza, Bookcase, Lateral File</td>
</tr>
<tr>
<td>3</td>
<td>Wardrobe, lockable, 48&quot; tall (minimum)</td>
</tr>
</tbody>
</table>

### Security Special Requirements

- **Furnishings and Equipment 1:** Computer(s), printer, telephone, Facsimile, Security Workstation
- **Furnishings and Equipment 2:** Exec. Desk, Return & Task Chair, Chair(s), Credenza, Bookcase, Lateral File
- **Furnishings and Equipment 3:** Wardrobe, lockable, 48" tall (minimum)

### Other Requirements

- **GSA Class V Safe:** Minimum of two drawers, FF-L-2740B lock on each drawer.
- **Exterior Window:** Optional.
- **Alt Door:** A-A Wood, full flush. Requires interior window w/ full width view into work area.
- **Door Hardware:** X. Power Transfer Hinge.

### Communications Special Requirements

- **Phone Outlets:** Phone 06 RJ-45 phone port, 1 per wall minimum
- **Data Outlets:** Data 05: Data port, 1 per wall minimum
- **Communications Special Requirements:**

### Security Special Requirements

- **CCTV Camera:** N/A
- **IDS:** N/A
- **Access Control:** Two factor, APL-listed card reader, DPS
- **Duress System:** N/A
- **GSA Class V Safe:** Minimum of two drawers, FF-L-2740B lock on each drawer. Exterior window is optional.
- **Exterior Window:** Optional.
- **Alt Door:** A-A Wood, full flush. Requires interior window w/ full width view into work area.
- **Door Hardware:** X. Power Transfer Hinge.

### SCHEMATIC PLAN

**Chief’s Office**

- **Chief’s Office**
- **Phone:** Not shown
- **Fax Machine:** Not shown
- **Credenza:** Not shown
- **Desk Return:** Not shown
- **Chair:** Not shown
- **Lateral File:** Not shown
- **CCTV Camera:** N/A
- **IDS:** N/A
- **Access Control:** N/A
- **Door Hardware:** N/A

**Schematic Plan**

- **Chief’s Office**
- **Book Case**
- **Access Control/ Card Reader**
- **Wardrobe**
- **Lateral File**
- **Optional Class V Safe**
- **Security Workstation**
- **Credenza**
- **Fax Machine**
- **Printer**
- **Desk Return**
- **Telephone**
- **Wall Mounted TV**
- **Side Chair**

**Chief’s Office**

**Schematic Plan**

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**Chief’s Office**

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**Chief’s Office**

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- **Wardrobe**
- **Lateral File**
- **Optional Class V Safe**
- **Security Workstation**
- **Credenza**
- **Fax Machine**
- **Printer**
- **Desk Return**
- **Telephone**
- **Wall Mounted TV**
- **Side Chair**
The CBP Supervisor manages the day-to-day activities and performance of CBPOs; additionally, the CBP Supervisor is available to the public, as required. The CBP Supervisor's Office area is located adjacent to the CBPO work areas and generally in the CBP Operational Support area. A minimum of one office is always required. At large facilities, it may be required to overlook inspection areas.

### 2.0 OPERATIONAL SUPPORT SPACES

#### DIV 08 - DOORS AND WINDOWS

**Room Code:** CRG-02-06  
**Date:** 5/18/2018  
**Time:** 1:55 PM  

<table>
<thead>
<tr>
<th>Room Function</th>
<th>Room Code</th>
<th>2.0 OPERATIONAL SUPPORT SPACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor's Office</td>
<td>CRG-02-06</td>
<td>2.0 OPERATIONAL SUPPORT SPACES</td>
</tr>
</tbody>
</table>

**Room Size:** 150 SF  
**Room Occupancy:** 1 Staff + 2 Visitors

- **Sprinkler Head Type:** SPKLR-08 Semi-Recessed Pendant
- **Fire Special Requirements:** None
- **Fixtures and Fittings 2:** N/A
- **Fixtures and Fittings 3:** N/A
- **Fixtures and Fittings 4:** N/A
- **Fixtures and Fittings 5:** N/A
- **Fixtures and Fittings 6:** N/A
- **Fixtures and Fittings 7:** N/A
- **Fire Special Requirements:** None
- **Water Special Requirements:** None
- **Mech Special Requirements:** None
- **Electrical Special Requirements:** None
- **Lighting Special Requirements:** Provide 40 FC at working surface, L-15 Task or L-13 under cabinet lighting at desk.

**DIV 09 - CONSTRUCTION AND FINISHES**

**Room Function:** Cargo

- **Acoustic Separation:** STC 45: Minimum sound isolation
- **Floor Finish:** FF-09 Carpet Tile
- **Base:** BF-01 Rubber Base
- **Wall Construction:** Wall-02 Gypsum Board on Metal Stud, Sound Insulation
- **Wall Finish:** WF-01: Gypsum Board, 5/8" Regular, Painted
- **Ceiling Const. / Finish:** CF-03: Acoustic Ceiling Tile, Suspended
- **Ceiling Height:** 9'-0"
- **Alternate Construction:** 5/8" Gypsum Ceiling, Painted
- **Const Special Requirements:** Mini-blinds at windows.

**DIV 10 - FIXED EQUIPMENT**

- **Fixed Equipment 1:** GSA Class V Safe, minimum of two drawers, FF-L-2740B lock on each drawer
- **Fixed Equipment 2:** Wall mount for video monitor(s)
- **Fixed Equipment 3:** N/A

**DIV 11 - LIGHTING**

- **Lighting Fixture:** L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp
- **Lighting Control:** LC-4: Combination Wall Switch with Occupancy Sensor
- **Lighting Special Requirements:** Provide 40 FC at working surface, L-15 Task or L-13 under cabinet lighting at desk.
### Furnishings and Equipment 1:
- Computer(s), printer, telephone, Video Monitor(s)

### Furnishings and Equipment 2:
- Exec. Desk, Return & Task Chair, Chair(s), Credenza, File Cabinet, Lateral, 4 drawer
- Wardrobe, lockable, 48” tall (minimum)

### Phone Outlets:
- Phone 06: RJ-45 phone port, 1 per wall minimum

### Data Outlets:
- Data 05: Data port, 1 per wall minimum

### Communications Special Requirements:
- CCTV Camera: N/A
- IDS: N/A
- Access Control: Two factor, APL-listed card reader, DPS
- Duress System: N/A

### Security Workstation (Optional)
- GSA Class V Safe, minimum of two drawers, FF-L-2740B lock on each drawer (Optional)
- Security Workstation (Optional)

### Door Hardware: X. Power Transfer Hinge.

### SCHEMATIC PLAN

**Supervisor’s Office**

![Supervisor’s Office Diagram](image)

**NOT TO SCALE**

FOR REFERENCE PURPOSES ONLY

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The Officer's Workstation is for CBP officers to complete administrative work. The Officer's Workstation and associated workstations are required in sufficient number to accommodate the CBP Officers and support personnel. The number of workstations will be specified by CBP based on operational and staffing requirements. The Officer's Workstation may be conjoined in a larger office environment with various teams.

### ROOM SIZE: ROOM OCCUPANCY

| 24-64 SF per | 1 Staff per Workstation |

### DIV 08 - DOORS AND WINDOWS

| Door Type: | N/A |
| Door Frame: | N/A |
| Door Lockset Group: | N/A |
| Door Hardware Cylinder: | N/A |
| Door Hardware Group: | N/A |
| Interior Window: | N/A |
| Exterior Windows: | N/A |
| Exterior Window / Door Glazing: | N/A |

Special Requirements: Refer to CBP Officer Work Area for room requirements.

### DIV 09 - CONSTRUCTION AND FINISHES

| Acoustic Separation: | N/A |
| Floor Finish: | N/A |
| Base: | N/A |
| Wall Construction: | N/A |
| Wall Finish: | N/A |
| Ceiling Const. / Finish: | N/A |
| Ceiling Remark: | |
| Ceiling Height: | |
| Alternate Construction: | |

Const Special Requirements: Refer to CBP Officer Work Area for room requirements.

### DIV 10 - FIXED EQUIPMENT

| Fixed Equipment 1: | 24 - 64 SF Workstation |
| Fixed Equipment 2: | |
| Fixed Equipment 3: | Wardrobe cabinet is option instead of side chair. |

### DIV 21 - FIRE SUPPRESSION

- Sprinkler Head Type: N/A
- Fire Special Requirements: None

### DIV 22 - PLUMBING

| Fixtures and Fittings 1: | N/A |
| Fixtures and Fittings 2: | |
| Fixtures and Fittings 3: | |
| Fixtures and Fittings 4: | |
| Fixtures and Fittings 5: | |
| Fixtures and Fittings 6: | |
| Fixtures and Fittings 7: | |

Plumbing Special Requirements: None

### DIV 23 - MECHANICAL

| Supply Register: | S-2: Square Ceiling Diffuser |
| Return Register: | RR-2: Return Grille |
| Temp Summer: | 75° (max) |
| Temp Winter: | 72° (min) |
| Temp Control: | Zone: Zone Temperature Control |
| Humidity Range: | 30% to 60% |

Mech Special Requirements: Refer to CBP Officer Work Area for room requirements.

### DIV 26 - ELECTRICAL

- Receptacles: R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall
- Other Electrical Receptacles: R-1B: Receptacle, Quad minimum
- Electrical Special: Workstations not adjacent to wall receive min 1 quadruplex outlet

### DIV 26 - LIGHTING

- Lighting Fixture: L-15: Lighting Fixture, Surface Mounted Task Light
- Fixture Types Optional/Special: N/A
- Lighting Control: N/A
- Lighting Special: Provide 50 FC at working surface. LC-9: Individual control for task light

---

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### DIV 10 - FURNISHINGS AND EQUIPMENT

<table>
<thead>
<tr>
<th>Equipment 1:</th>
<th>Adjustable Task Chair(s), Side (guest) Chair(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment 2:</td>
<td>File Cabinet, Lateral, 2 drawer, Wardrobe, lockable, 48&quot; tall (minimum)</td>
</tr>
<tr>
<td>Equipment 3:</td>
<td>Computer, printer, telephone</td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

CBP operational requirements will determine number of workstations (each workstation is 24-64 SF). The local CBP Command Center (CCC) if not located in a separate room, will occupy one workstation unless the size of the facility prohibits the use of this space.

All components and systems furniture in workstations are to be keyed individually under a master key.

### DIV 27 - COMMUNICATIONS

| Phone Outlets: | Phone 06 RJ-45 phone port, 1 per wall minimum |
| Data Outlets:  | Data 05: Data port, 1 per wall minimum |
| Communications Special | Workstation not adjacent to wall receive min 1 voice drop and 2 data drops |

### DIV 28 - SECURITY

| CCTV Camera: | N/A |
| IDS: | N/A |
| Access Control: | N/A |
| Duress System | N/A |

### OTHER REQUIREMENTS

DIV 10 - FURNISHINGS AND EQUIPMENT  
Chapter 14

DIV 27 - COMMUNICATIONS  
Chapter 20

DIV 28 - SECURITY  
Chapter 21

### SCHEMATIC PLAN

**CBP Officer Workstation**

![CBP Officer Workstation Diagram]

**NOT TO SCALE**

*For Reference Purposes Only*

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The Officer's Works Area is for CBP officers to complete administrative work. The work area is comprised of CBP Officer Workstations. Work Areas can be collocated or separated based on location, mission, or duties. The Officer's Workstation are required in sufficient number to accommodate the CBP Officers and support personnel. The number of workstations will be specified by CBP based on operational and staffing requirements. The Officer's Work Area will be located within the Operational Support area. The Officer's Workstation may be comingled in a larger office environment with various teams.

### 2.0 OPERATIONAL SUPPORT SPACES

#### DIV 08 - DOORS AND WINDOWS

**Door Type:** B-B-01  Hollow Metal, Full flush, seamless  
**Door Frame:** HM-1  Interior, 12 gauge hollow metal, fully welded  
**Door Lockset Group:** B  Mortise Lever Lockset w/ Thumb Turn - Entrance Function  
**Door Hardware Cylinder:** A-1: Cylinder, keyed individually under a CBP Master  
**Door Hardware Group:** B  Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer  
**Interior Window:** Hollow Metal Frame, Painted, 1/4" tempered glazing  
**Exterior Windows:** Aluminum Framed Windows  
**Exterior Window / Door Glazing:** GL-02  Low-E Insulating Glazing, tinted

#### DIV 09 - CONSTRUCTION AND FINISHES

**Acoustic Separation:** STC 45:  Minimum sound isolation  
**Floor Finish:** FF-17  Anti-static VCT  
**Base:** BF-01  Rubber Base, 4" H  
**Wall Construction:** Wall-02  Gypsum Board on Metal Stud, Sound Insulation  
**Wall Finish:** WF-01:  Gypsum Board, 5/8" Regular, Painted  
**Ceiling Const. / Finish:** CF-03:  Acoustic Ceiling Tile, Suspended  
**Ceiling Remark:**  
**Ceiling Height:** 9-0" (min), higher preferred above 10 workstations  
**Alternate Construction:** Ceiling: CF-01:  Gypsum Board, 5/8" Regular, Painted  
**Const Special Requirements:** Provide mini-blinds

#### DIV 10 - FIXED EQUIPMENT

**Fixed Equipment 1:** 64 SF Workstation  
**Fixed Equipment 2:**  
**Fixed Equipment 3:**  

#### DIV 21 - FIRE SUPPRESSION

**Sprinkler Head Type:** SPKLR-06  Concealed Recessed Pendant  
**Fire Special Requirements:** None

#### DIV 22 - PLUMBING

**Fixtures and Fittings:** N/A

#### DIV 23 - MECHANICAL

**Supply Register:** S-2:  Square Ceiling Diffuser  
**Return Register:** RR-2:  Return Grille  
**Temp Summer:** 75° (max)  
**Temp Winter:** 72° (min)  
**Temp Control:** Zone:  Zone Temperature Control  
**Humidity Range:** 30% to 60%  
**Special Security:** Mech Special Requirements:

#### DIV 26 - ELECTRICAL

**Receptacles:** R-1:  Receptacle, Standard duplex, all walls, spaced at 10'- 0" max OC, min 1 / wall  
**Other Electrical Receptacles:** R-1B  Receptacle, Quad minimum  
**Electrical Special:** Workstations not adjacent to wall receive min 1 quadruplex outlet

#### DIV 26 - LIGHTING

**Lighting Fixture:** L-15:  Lighting Fixture, Surface Mounted Task Light  
**Lighting Control:** LC-5:  Combination Wall Switch with Occupancy Sensor & Dimmer  
**Lighting Special:** Provide 50 FC at working surface. LC-9:  Individual control for task light
**DIV 10 - FURNISHINGS AND EQUIPMENT**  
**Chapter 14**

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Recycle Bin, Waste Bin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td>N/A</td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**OTHER REQUIREMENTS**  
CBP operational requirements will determine number of workstations (each workstation is 64 SF). The local CBP Command Center (CCC) if not located in a separate room, will occupy the work area unless the size of the facility prohibits the use of this space. All components and systems furniture in workstations are to be keyed individually under a master key.

---

**DIV 27 - COMMUNICATIONS**  
**Chapter 20**

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>Phone 06 RJ-45 phone port, 1 per wall minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>Data 05: Data port, 1 per wall minimum</td>
</tr>
<tr>
<td>Communications Special:</td>
<td>Workstation not adjacent to wall receive min 1 voice drop and 2 data drops</td>
</tr>
</tbody>
</table>

---

**DIV 28 - SECURITY**  
**Chapter 21**

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>N/A</td>
</tr>
<tr>
<td>Access Control:</td>
<td>N/A</td>
</tr>
<tr>
<td>Duress System:</td>
<td>N/A</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td>If entering from processing floor provide Two Factor, APL-Listed Card Reader, DPS/ unrestricted egress</td>
</tr>
</tbody>
</table>

---

**SCHEMATIC PLAN**  
**CBP Officer Work Area**  
**CRG-02-08**

*8-Workstation Configuration  
Layout Example for Reference Only*
The Supply/Storage Room is required for the storage of CBP supplies and other miscellaneous items required for daily CBP operations. This space is located within the CBP operational support officer work area.

One Supply/Storage Room space of 100 SF is required for up to 15 CBP Officers based on the peak number of CBP officers per shift. An additional 50 SF of Supply/Storage Room space is required after the first 15 CBP officers for every additional 25 CBP officers on the peak shift.

---

### DIV 08 - DOORS AND WINDOWS

**Door Type:** B-B-01 Hollow Metal, Full flush, seamless

**Door Frame:** HM-1 Interior, 12 gauge hollow metal, fully welded

**Door Lockset Group:** B Mortise Lever Lockset w/ Thumb Turn - Entrance Function

**Door Hardware Cylinder:** A-1: Cylinder, keyed individually under a CBP Master

**Door Hardware Group:** D Door Stop

**Interior Window:** N/A

**Exterior Windows:** N/A

**Special Requirements:** J - Non-removable hinges if out-swing door.

---

### DIV 09 - CONSTRUCTION AND FINISHES

**Acoustic Separation:** No Special Acoustical Requirement

**Floor Finish:** FF-02 Concrete, troweled, uniform texture and appearance

**Base:** BF-01 Rubber Base, 4” H

**Wall Construction:** Wall-02 Gypsum Board on Metal Stud, Sound Insulation

**Wall Finish:** WF-01: Gypsum Board, 5/8” Regular, Painted

**Ceiling Const. / Finish:** CF-03: Acoustic Ceiling Tile, Suspended

**Ceiling Remark:**

**Ceiling Height:** 9’ min

**Alternate Construction:** Floor: VCT

**Const Special Requirements:** If located with Violator area, all construction and finishes to match adjoining areas.

---

### DIV 10 - FIXED EQUIPMENT

**Fixed Equipment 1:** Metal Shelving, Heavy Duty, 5 shelf, 18” x 36” x 85”H

**Fixed Equipment 2:**

**Fixed Equipment 3:**

---

### DIV 21 - FIRE SUPPRESSION

**Sprinkler Head Type:** SPKLR-08 Semi-Recessed Pendant

**Fire Special Requirements:**

---

### DIV 22 - PLUMBING

**Fixtures and Fittings 1:** NA

**Fixtures and Fittings 2:**

**Fixtures and Fittings 3:**

**Fixtures and Fittings 4:**

**Fixtures and Fittings 5:**

**Fixtures and Fittings 6:**

**Plumbing Special Requirements:**

---

### DIV 23 - MECHANICAL

**Supply Register:** S-2: Square Ceiling Diffuser

**Return Register:** RR-2: Return Grille

**Temp Summer:** 75° (max)

**Temp Winter:** 72° (min)

**Humidity Range:** 30% to 60%

**Mech Special Requirements:**

---

### DIV 26 - ELECTRICAL

**Receptacles:** R-1: Receptacle, Standard duplex, all walls, spaced at 10 - 0” max OC, min 1 / wall

**Other Electrical Receptacles:**

**Electrical Special Requirements:**

---

### DIV 26 - LIGHTING

**Lighting Fixture:** L-2: Lighting Fixture, Recessed 2x2 or 2x4 Acrylic Lens, 80+ CRI Lamp

**Fixture Types Optional/Special:**

**Lighting Control:** LC-4: Combination Wall Switch with Occupancy Sensor

**Lighting Special Requirements:** Provide 20 FC at floor level

---

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<thead>
<tr>
<th>DIV 10 - FURNISHINGS AND EQUIPMENT</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 1:</td>
<td>File Cabinet, Standard 4 drawer</td>
</tr>
<tr>
<td>Furnishings and Equipment 2:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 27 - COMMUNICATIONS</th>
<th>Chapter 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone Outlets:</td>
<td>N/A</td>
</tr>
<tr>
<td>Data Outlets:</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications Special</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 28 - SECURITY</th>
<th>Chapter 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCTV Camera:</td>
<td>N/A</td>
</tr>
<tr>
<td>IDS:</td>
<td>N/A</td>
</tr>
<tr>
<td>Access Control:</td>
<td>N/A</td>
</tr>
<tr>
<td>Duress System:</td>
<td>N/A</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

**OTHER REQUIREMENTS**
Verify quantities of shelving and file cabinets.

**SCHEMATIC PLAN**
Supply/Storage Room

![SCHEMATIC PLAN](image)
The conference room/muster area is used to conduct general staff meetings, CBPO musters, and meetings with other Federal agency members, as required. This Room is located adjacent to the other staff work areas and support spaces. Size variations noted below in Other Requirements.

### Room Size: 240-350 SF
- **Room Occupancy:** 8 to 10 Occupants

#### DIV 08 - Doors and Windows Chapter 14
- **Door Type:** B-B-01 Hollow Metal, Full flush, seamless
- **Door Frame:** HM-1 Interior, 12 gauge hollow metal, fully welded
- **Door Lockset Group:** B Mortise Lever Lockset w/ Thumb Turn - Entrance Function
- **Door Hardware Cylinder:** A-1: Cylinder, keyed individually under a CBP Master
- **Interior Window:** N/A
- **Exterior Windows:** N/A
- **Exterior Window / Door Glazing:** Special Requirements: Alt door: A-A Wood, Full Flush

#### DIV 09 - Construction and Finishes Chapter 14
- **Acoustic Separation:** STC 50: Moderate sound isolation. Very loud sounds can be faintly heard
- **Floor Finish:** FF-04 VCT
- **Base:** BF-01 Rubber Base
- **Wall Construction:** Wall-02 Gypsum Board on Metal Stud, Sound Insulation
- **Wall Finish:** WF-02: Gypsum Board, 5/8” High Impact, Painted
- **Ceiling Const / Finish:** CF-03: Acoustic Ceiling Tile, Suspended
- **Ceiling Remark:**
- **Ceiling Height:** 9'-0"
- **Alternate Construction:**
- **Const Special Requirements:** Mini-blinds at windows.

#### DIV 10 - Fixed Equipment Chapter 14
- **Fixed Equipment 1:** Dry Erase Marker Board, White, 60" W x 36" H
- **Fixed Equipment 2:** Wall mount for video monitor(s)
- **Fixed Equipment 3:**

---

### DIV 21 - Fire Suppression Chapter 16
- **Sprinkler Head Type:** SPKLR-06 Concealed Recessed Pendant
- **Fire Special Requirements:** None

### DIV 22 - Plumbing Chapter 17
- **Fixtures and Fittings 1:** N/A
- **Fixtures and Fittings 2:**
- **Fixtures and Fittings 3:**
- **Fixtures and Fittings 4:**
- **Fixtures and Fittings 5:**
- **Fixtures and Fittings 6:**
- **Fixtures and Fittings 7:**
- **Plumbing Special Requirements:** None

### DIV 23 - Mechanical Chapter 18
- **Supply Register:** S-2: Square Ceiling Diffuser
- **Return Register:** RR-2: Return Grille
- **Temp Summer:** 75° (max)
- **Temp Winter:** 72° (min)
- **Temp Control:** T-1: Flush Mounted Wall Temperature Sensor
- **Humidity Range:** 30% to 60%
- **Special Security:**
- **Mech Special Requirements:** S-1, 4, RR-1 registers are options.

### DIV 26 - Electrical Chapter 19
- **Other Electrical Receptacles:** R-1: Receptacle, Standard duplex, all walls, spaced at 10 - 0” max OC, min 1 / wall
- **Other Electrical Receptacles:** Receptacle, Dedicated UPS-fed, Receptacle, Recessed Power / Data Floor Box, 2 duplex minimum
- **Electrical Special Requirements:** Recessed flush floor outlet centered on conference table, 8 outlets.

### DIV 26 - Lighting Chapter 19
- **Lighting Fixtures:** L-1B: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 94+ CRI Lamp
- **Fixture Types Optional/Special:** L-7: Lighting Fixture, Recessed 6” Downlight
- **Lighting Control:** LC-4: Combination Wall Switch with Occupancy Sensor
- **Lighting Special:** Provide 30 FC at working surface. LC-2 Dimmers for lighting.
FURNISHINGS AND EQUIPMENT

Furnishings and Equipment 1:
Collapsible easel, Computer(s), Conference Phone, Conference Table and Chairs

Furnishings and Equipment 2:
Ceiling-mounted video projector, screen, associated wiring & power, Video Monitor(s)

Furnishings and Equipment 3:
Conference Table and Chairs, Credenza, Portable AV and or Video Conferencing equipment.

OTHER REQUIREMENTS

Equipment:
Include multiple monitor brackets at larger room sizes.

Provide television outlet with service package that includes local media and national news networks.

Provide connection points from ceiling mounted projector to conference table, allowing occupants to connect computers to the projector while seated at the table.

One conference room is required.

If up to 25 officers on the peak shift it shall be 240 SF,
If 25 to 50 officers on the peak shift it shall be 350 SF,
If 50 to 75 officers on the peak shift it shall be 450 SF and,

If more than 75 on the peak shift it shall be 600 SF.

COMMUNICATIONS

Phone Outlets:
Phone 06 RJ-45 phone port, 1 per wall minimum

Data Outlets:
Data 05: Data port, 1 per wall minimum

Communications Special
Provide additional phone, data and AV at floor outlet centered on conference table.

SECURITY

CCTV Camera:
N/A

IDS:
N/A

Access Control:
N/A

Duress System:
N/A

Security Special Requirements:

Equipment:
Include multiple monitor brackets at larger room sizes.

Provide television outlet with service package that includes local media and national news networks.

Provide connection points from ceiling mounted projector to conference table, allowing occupants to connect computers to the projector while seated at the table.

One conference room is required.

If up to 25 officers on the peak shift it shall be 240 SF,
If 25 to 50 officers on the peak shift it shall be 350 SF,
If 50 to 75 officers on the peak shift it shall be 450 SF and,
If more than 75 on the peak shift it shall be 600 SF.

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This conference room is used to conduct meetings. The space requires audio and video capability.

**DIV 08 - DOORS AND WINDOWS**  
Chapter 14

| Door Type: | A-A, Wood, Full flush, 36" wide x 7'-0" high x 1-3/4" thick, Solid core, 5 layers |
| Door Frame: | HM-1, Interior, 12 gauge hollow metal, fully welded |
| Door Lockset Group: | A, Mortise Lever Lockset - Classroom Function |
| Door Hardware Cylinder: | A-1, Cylinder, keyed individually under a CBP Master |
| Door Hardware Group: | B, Automatic Door Bottom, D, Door Stop, E, Door Threshold, K, Automatic Door Closer |
| Interior Window: | Hollow Metal Frame, Painted, 1/4" tempered glazing |
| Exterior Windows: | Aluminum Framed Windows, Steel reinforced |
| Exterior Window / Door Glazing: | GL-01, Low-E Insulating Glazing, clear |
| Special Requirements: | All door: B-B Hollow Metal, sidelight adjacent to door. |

**DIV 09 - CONSTRUCTION AND FINISHES**  
Chapter 14

| Acoustic Separation: | STC 50: Moderate sound isolation. Very loud sounds can be faintly heard |
| Floor Finish: | FF-09, Carpet Tile |
| Base: | BF-01, Rubber Base |
| Wall Construction: | Wall-02, Gypsum Board on Metal Stud, Sound Insulation |
| Wall Finish: | WF-01, Gypsum Board, 5/8" Regular, Painted |
| Ceiling Const. / Finish: | CF-03, Acoustic Ceiling Tile, Suspended |
| Ceiling Height: | 9'-0" |
| Alternate Construction: | 5/8" Gypsum Ceiling, Painted |
| Const Special Requirements: | Mini-blinds at windows. |

**DIV 10 - FIXED EQUIPMENT**  
Chapter 14

| Fixed Equipment 1: | Wall mount for video monitor(s), Work Counter, Cabinets below |
| Fixed Equipment 2: | |
| Fixed Equipment 3: | |

**DIV 21 - FIRE SUPPRESSION**  
Chapter 16

| Sprinkler Head Type: | SPKLR-06, Concealed Recessed Pendant |
| Fire Special Requirements: | None |

**DIV 22 - PLUMBING**  
Chapter 17

| Fixtures and Fittings 1: | N/A |
| Fixtures and Fittings 2: | |
| Fixtures and Fittings 3: | |
| Fixtures and Fittings 4: | |
| Fixtures and Fittings 5: | |
| Fixtures and Fittings 6: | |
| Fixtures and Fittings 7: | |
| Plumbing Special | None |

**DIV 23 - MECHANICAL**  
Chapter 18

| Supply Register: | S-2, Square Ceiling Diffuser |
| Return Register: | RR-2, Return Grille |
| Temp Summer: | 75° (max) |
| Temp Winter: | 72° (min) |
| Temp Control: | T-1, Flush Mounted Wall Temperature Sensor |
| Humidity Range: | 30% to 60% |
| Special Security: | |
| Mech Special Requirements: | S-1, 4, RR-1 registers are options. |

**DIV 26 - ELECTRICAL**  
Chapter 19

| Receptacles: | R-1, Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall |
| Other Electrical Receptacles: | Receptacle, Dedicated UPS-fed, Receptacle, Recessed Power / Data Floor Box, 2 duplex minimum |
| Electrical Special | Recessed flush floor outlet centered on conference table, 8 outlets. |

**DIV 26 - LIGHTING**  
Chapter 19

| Lighting Fixture: | L-1B, Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 94+ CRI Lamp |
| Lighting Fixtures Optional/Special: | L-7, Lighting Fixture, Recessed 6" Downlight |
| Lighting Control: | LC-4, Combination Wall Switch with Occupancy Sensor |
| Lighting Special | Provide 40 FC at working surface. LC-2 Dimmer for incandescent lighting. |
### Furnishings and Equipment

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Conference Phone, Conference Table and Chairs, Video Teleconference Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td>Video Monitor, Wall-mount bracket to accommodate 42” (min) TV screen</td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td>Credenza, Wall-mount presentation cabinet with 60” x 36” white dry erase marker board</td>
</tr>
</tbody>
</table>

### Other Requirements

Provide television outlet with service package that includes local media and national news networks, located at monitor mounting bracket.

Provide HDMI/VGA video jacks at floor outlet connected to outlet located at monitor mounting area. The wall mounted video monitors shall be sufficiently sized to allow for all participants in the room to easily view displayed information.

### Communications

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>Phone 06 RJ-45 phone port, 1 per wall minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>Data 05: Data port, 1 per wall minimum</td>
</tr>
</tbody>
</table>

**Provide phone and data at floor outlet centered on conference table.**

### Security

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>N/A</td>
</tr>
<tr>
<td>Access Control:</td>
<td>N/A</td>
</tr>
<tr>
<td>Duress System:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Access Control: N/A

### Other Requirements

**Provide television outlet with service package that includes local media and national news networks, located at monitor mounting bracket.**

**Provide HDMI/VGA video jacks at floor outlet connected to outlet located at monitor mounting area. The wall mounted video monitors shall be sufficiently sized to allow for all participants in the room to easily view displayed information.**
The Document Handling Room may be combined with other office areas (i.e., Officer Work Area, or Staff Support Area). It is adjacent to the CBPO work area. At small ports, document handling functions shall be provided in an area alcove area. One document handling room is required.

**Div 08 - Doors and Windows**

- Door Type: A-A Wood, Full flush, 36” wide x 7'-0” high x 1-3/4” thick, Solid core, 5 layers
- Door Frame: HM-1 Interior, 12 gauge hollow metal, fully welded
- Door Lockset Group: B Mortise Lever Lockset w/ Thumb Turn - Entrance Function
- Door Hardware Cylinder: A-2: Cylinder, keyed individually NOT under a CBP Master
- Door Hardware Group: B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer
- Interior Window: N/A
- Exterior Windows: N/A
- Exterior Window / Door Glazing: N/A
- Special Requirements: Alt door: B-B Hollow Metal. J - Non-removable hinges if out-swing door.

**Div 09 - Construction and Finishes**

- Acoustic Separation: No Special Acoustical Requirement
- Floor Finish: FF-04 VCT
- Base: BF-01 Rubber Base
- Wall Construction: Wall-02 Gypsum Board on Metal Stud, Sound Insulation
- Wall Finish: WF-01: Gypsum Board, 5/8” Regular, Painted
- Ceiling Const. / Finish: CF-03: Acoustic Ceiling Tile, Suspended
- Ceiling Remark:
- Ceiling Height: 9'-0"
- Alternate Construction: Ceiling: 5/8” Gypsum, Painted. Floor: match adjacent if space is within another area.
- Const Special Requirements:

**Div 10 - Fixed Equipment**

- Fixed Equipment 1: Wall Cabinets, Work Counter, Cabinets below
- Fixed Equipment 2:
- Fixed Equipment 3: Counters and cabinets shall be plastic laminate, specified for high durability.

**Div 21 - Fire Suppression**

- Sprinkler Head Type: SPKLR-08 Semi-Recessed Pendant
- Fire Special Requirements: None

**Div 22 - Plumbing**

- Fixtures and Fittings 1: N/A
- Fixtures and Fittings 2: N/A
- Fixtures and Fittings 3: N/A
- Fixtures and Fittings 4: N/A
- Fixtures and Fittings 5: N/A
- Fixtures and Fittings 6: N/A
- Fixtures and Fittings 7: N/A
- Plumbing Special Requirements: None

**Div 23 - Mechanical**

- Supply Register: S-2: Square Ceiling Diffuser
- Return Register: RR-2: Return Grille
- Temp Summer: 75° (max)
- Temp Winter: 72° (min)
- Temp Control: T-1: Flush Mounted Wall Temperature Sensor
- Humidity Range: 30% to 60%
- Special Security: Mech Special Requirements: S-1, S-4, RR-1 registers are options.

**Div 26 - Electrical**

- Other Electrical Receptacles: Receptacle, Dedicated for Copier, verify type and voltage
- Electrical Special: Additional R-1 receptacles above counters, 36” OC.

**Div 26 - Lighting**

- Lighting Fixture: L-1A: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 85+ CRI Lamp
- Lighting Control: LC-4: Combination Wall Switch with Occupancy Sensor
- Lighting Special: Provide 40 FC at working surface.
### Furnishings and Equipment 1:
- Copier, Facsimile, File Cabinet, Standard, High Capacity Shredder

### Furnishings and Equipment 2:
- Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H

### Furnishings and Equipment 3:
- Recycle Bin, Telephone, Waste Bin

### OTHER REQUIREMENTS
Cabinets shall be sized to store general office supplies, including copy paper, ink toner cartridges, stationary, and binding supplies.

### Phone Outlets:
- Phone 06: RJ-45 phone port, 1 per wall minimum

### Data Outlets:
- Data 05: Data port, 1 per wall minimum

### Communications Special
- Phone outlet at 5' AFF.

### CCTV Camera:
- N/A

### IDS:
- N/A

### Access Control:
- N/A

### Duress System:
- N/A

### Security Special Requirements:
- N/A

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**SCHEMATIC PLAN**

**Document Handling Room**

**CRG-02-12**

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**CFDS – 2019 – ROOM DATA SHEETS**

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### Local Area Network (LAN) Room

**Support**

The LAN room is a secure space that accommodates all CBP secure LAN equipment & all facility system equipment connected to CBP secure LAN. The LAN room combines the voice, data & other systems into one area within the facility. LAN room shall contain only DHS IT equipment. Colocation of non DHS/CBP IT equipment is not permitted. Within the room, racks will be installed & IT equipment enclosed in lockable cabinets. The CCTV camera(s) will be located within the LAN to ensure no blind spots. Dedicated HVAC controls are required within the LAN room to regulate the temperature and humidity levels in this room. This room shall be constructed in compliance with current CBP SPPH standards relating to the construction of a strong room.

<table>
<thead>
<tr>
<th>ROOM SIZE:</th>
<th>ROOM OCCUPANCY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>180 SF (min)</strong></td>
<td><strong>N/A</strong></td>
</tr>
</tbody>
</table>

**DIV 08 - DOORS AND WINDOWS**

| Door Type: | B-B-01 Hollow Metal, Full flush, seamless |
| Door Frame: | HM-1 Interior, 12 gauge hollow metal, fully welded |
| Door Lockset Group: | N Electric Mortise Lock with Lever set and built-in REX function & key override |
| Door Hardware Cylinder: | A-2: Cylinder, keyed individually NOT under a CBP Master |
| Door Hardware Group: | D Door Stop, G BMAS-UL 634 Level 2, J Non-Removable Hinges (outswing) |
| Interior Window: | N/A |
| Exterior Windows: | N/A |
| Exterior Window / Door Glazing: | N/A |
| Special Requirements: | |

**DIV 09 - CONSTRUCTION AND FINISHES**

| Acoustic Separation: | STC 45: Minimum sound isolation |
| Floor Finish: | FF-17 Anti-static VCT |
| Base: | BF-01 Rubber Base, 4" H |
| Wall Construction: | Wall-19 3/4" FRT painted plywood over #9 (10Ga) Expanded Metal Mesh on metal studs |
| Wall Finish: | WF-16: 3/4" FRT Plywood on furring channels, Painted. At walls noted on plan. |
| Ceiling Const. / Finish: | CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted |
| Ceiling Remark: | Exposed structure acceptable. |
| Ceiling Height: | 9' min clear below all ceiling mounted equipment/infrastructure and drop ceiling. |
| Alternate Construction: | |
| Const Special Requirements: | |

**DIV 10 - FIXED EQUIPMENT**

| Fixed Equipment 1: | Four post equipment racks (by Government and installed by contractor). 3' clear front/back |
| Fixed Equipment 2: | Two post equipment racks (provided and installed by cabling contractor). |
| Fixed Equipment 3: | ¾" x 4" x 8' plywood backboard installed horizontally 2 to 3' AFF, one full wall (min) |

**DIV 21 - FIRE SUPPRESSION**

| Sprinkler Head Type: | SPKLR-01 Pendant |
| Fire Special Requirements: | Dry System |

**DIV 22 - PLUMBING**

| Plumbing Special Requirements: | Make-up water line to HVAC equipment. Condensate drain line with pump for HVAC equip. |

**DIV 23 - MECHANICAL**

| Supply Register: | S-2: Square Ceiling Diffuser |
| Return Register: | RR-2: Return Grille |
| Temp Summer: | 64° to 80° |
| Temp Winter: | 64° to 80° |
| Temp Control: | Room: Dedicated Room Temperature control |
| Humidity Range: | 40% to 60% |
| Special Security: | N/A |
| Mech Special Requirements: | One dedicated, wall-mounted, computer rm type A/C unit with microprocessor control. Provide 400 CFM min conditioned air from base HVAC as backup |

**DIV 26 - ELECTRICAL**

| Electrical Special: | Dedicated receptacle for telephone and computer equipment. See Other Requirements, Electrical |

**DIV 26 - LIGHTING**

| Lighting Fixtures: | L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens |
| Lighting Special: | Provide 30 FC at floor level |
**DIV 10 - FURNISHINGS AND EQUIPMENT**

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Lockable Equipment Cabinet(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td>Rack-mounted NVRs, Telephone</td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

**OTHER REQUIREMENTS**

Electrical: Provide ¼” x 4” x 12” copper ground bar mounted on plywood backboard and bonded to building ground system. Convenience receptacles around room perimeter and dedicated receptacles for telephone and computer equipment fed from local panel. Provide UPS Surge Protection from local panel, for incoming data and communication lines. All equipment in room on E/G backup. Back up to equipment power shall include quad receptacles, 20 amp isolated ground per equipment rack on each wall and an individual circuit. 4” conduit stub-ups for incoming feeds located under plywood backboard. Ceiling penetrations only allowed by conduit. Provide fire stopping as required by code. Door Hardware: X. Power Transfer Hinge, K. Automatic Door Closer.

**DIV 27 - COMMUNICATIONS**

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>Phone 04 4 - Double RJ-45 phone port, each side of backboard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>Data 05: Data port, 1 per wall minimum</td>
</tr>
</tbody>
</table>

**DIV 28 - SECURITY**

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>Fixed CCTV wide-angle lens camera, monitored at CCC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>IDS &amp; Alarm, UPS, Keypad control inside, adjacent to door, motion detectors, HSS-2</td>
</tr>
<tr>
<td>Access Control:</td>
<td>Two factor, APL-listed card reader</td>
</tr>
<tr>
<td>Duress System:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Security Special Requirements:**

Tamper resistant enclosures for equipment. Camera must be positioned within room.

---

**SCHEMATIC PLAN**

Local Area Network (LAN) Room

**DIV 27 - COMMUNICATIONS**

<table>
<thead>
<tr>
<th>Communications Special</th>
<th>2 post cabling: ceiling via rigid conduit. 4 post cabling: via flex conduit. TACCOM Equipment</th>
</tr>
</thead>
</table>

**DIV 28 - SECURITY**

- **CCTV Camera:** Fixed CCTV wide-angle lens camera, monitored at CCC.
- **IDS:** IDS & Alarm, UPS, Keypad control inside, adjacent to door, motion detectors, HSS-2
- **Access Control:** Two factor, APL-listed card reader
- **Duress System:** N/A

**Other Requirements**

- **Electrical:** Provide ¼” x 4” x 12” copper ground bar mounted on plywood backboard and bonded to building ground system. Convenience receptacles around room perimeter and dedicated receptacles for telephone and computer equipment fed from local panel. Provide UPS Surge Protection from local panel, for incoming data and communication lines. All equipment in room on E/G backup. Back up to equipment power shall include quad receptacles, 20 amp isolated ground per equipment rack on each wall and an individual circuit. 4” conduit stub-ups for incoming feeds located under plywood backboard. Ceiling penetrations only allowed by conduit. Provide fire stopping as required by code. Door Hardware: X. Power Transfer Hinge, K. Automatic Door Closer.

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**Local Area Network (LAN) Room**

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**NOT TO SCALE**

For Reference Purposes Only
A SLAN may contain network and system equipment such as head-end for the IDS, CCTV, NII system as well as any other system that is not connected to CBP secure LAN. Within the room, racks will be installed and equipment shall be enclosed in lockable cabinets. The CCTV camera(s) will be located within the SLAN to eliminate blind spots. Dedicated heating, ventilation, and air conditioning (HVAC) controls are required within the SLAN room to regulate the temperature and humidity levels in this room. The SLAN shall be located adjacent to LAN room. This room will be constructed in compliance with the current CBP SPPH standards relating to the construction of a strong room.

**DIV 08 - DOORS AND WINDOWS**

- **Door Type:** B-B-01 Hollow Metal, Full flush, seamless
- **Door Frame:** HM-1 Interior, 12 gauge hollow metal, fully welded
- **Door Latchset Group:** N Electrified Mortise Lock with Lever set and built-in REX function & key override
- **Door Hardware Cylinder:** A-2: Cylinder, keyed individually NOT under a CBP Master
- **Door Hardware Group:** D Door Stop, G BMAS-UL 634 Level 2, J Non-Removable Hinges (outswing), K Automatic Door
- **Interior Window:** N/A
- **Exterior Windows:** N/A
- **Exterior Window / Door Glazing:** N/A
- **Special Requirements:**
  - Fire Special Requirements: Dry System
  - Special Security: N/A
  - Mech Special Requirements: One Dedicated, wall-mounted, computer rm type A/C unit with microprocessor control. Provide 400 CFM min conditioned air from base HVAC as backup

**DIV 09 - CONSTRUCTION AND FINISHES**

- **Acoustic Separation:** STC 45: Minimum sound isolation
- **Floor Finish:** FF-17 Anti-static VCT
- **Base:** BF-01 Rubber Base, 4” H
- **Wall Construction:** Wall-19 3/4” FRT painted plywood over #9 (10Ga) Expanded Metal Mesh on metal studs
- **Wall Finish:** WF-16: 3/4” FRT Plywood on furring channels, Painted. At walls noted on plan.
- **Ceiling Const. / Finish:** CF-02: 5/8” Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted
- **Ceiling Remark:** Exposed structure acceptable.
- **Ceiling Height:** 9’ min clear below all ceiling mounted equipment/infrastructure and drop ceiling.
- **Alternate Construction:**
- **Const Special Requirements:**

**DIV 10 - FIXED EQUIPMENT**

- **Fixed Equipment 1:** Four post equipment racks (by Government and installed by contractor). 3’ clear front/back
- **Fixed Equipment 2:** Two post equipment racks (provided and installed by cabling contractor).
- **Fixed Equipment 3:** ¾” x 4” x 8’ plywood backboard installed horizontally 2 to 3’ AFF, one full wall (min)

**DIV 21 - FIRE SUPPRESSION**

- **Sprinkler Head Type:** SPKLR-01 Pendant
- **Fire Special Requirements:** Dry System
- **Plumbing Special Requirements:** Make-up water line to HVAC equipment. Condensate drain line with pump for HVAC equip.

**DIV 22 - PLUMBING**

- **Fixtures and Fittings 1:** FD-1: Floor Drains - Finished Area
- **Fixtures and Fittings 2:**
- **Fixtures and Fittings 3:**
- **Fixtures and Fittings 4:**
- **Fixtures and Fittings 5:**
- **Fixtures and Fittings 6:**
- **Fixtures and Fittings 7:**

**DIV 23 - MECHANICAL**

- **Supply Register:** S-2: Square Ceiling Diffuser
- **Return Register:** RR-2: Return Grille
- **Temp Summer:** 64° to 80°
- **Temp Winter:** 64° to 80°
- **Temp Control:** Room: Dedicated Room Temperature control
- **Humidity Range:** 40% to 60%
- **Special Security:** N/A
- **Mech Special Requirements:** One Dedicated, wall-mounted, computer rm type A/C unit with microprocessor control. Provide 400 CFM min conditioned air from base HVAC as backup

**DIV 26 - ELECTRICAL**

- **Receptacles:** R-1: Receptacle, Standard duplex, all walls, spaced at 10’-0” max Oc, min 1 / wall
- **Other Electrical Receptacles:**
- **Electrical Special:** Dedicated receptacle for telephone and computer equipment. See Other Requirements, Electrical

**DIV 26 - LIGHTING**

- **Lighting Fixture:** L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens
- **Lighting Control:** LC-4: Combination Wall Switch with Occupancy Sensor
- **Lighting Special:** Provide 30 FC at floor level

**CFDS – 2019 – ROOM DATA SHEETS**

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DIV 10 - FURNISHINGS AND EQUIPMENT  
Furnishings and Equipment 1: Lockable Equipment Cabinet(s), Rack-mounted NVRs
Furnishings and Equipment 2: Telephone
Furnishings and Equipment 3: 

OTHER REQUIREMENTS

Electrical: Provide ¼" x 4" x 12" copper ground bar mounted on plywood backboard and bonded to building ground system. Convenience receptacles around room perimeter and dedicated receptacles for telephone and computer equipment fed from local panel. Provide UPS Surge Protection from local panel, for incoming data and communication lines. All Equipment in room on E/G backup. Back up to equipment power shall include quad receptacles, 20 amp isolated ground per equipment rack on each wall and an individual circuit. 4" conduit stub-ups for incoming feeds located under plywood backboard. Ceiling penetrations only allowed by conduit. Provide fire stopping as required by code.

DIV 27 - COMMUNICATIONS  
Phone Outlets: Phone 04 - Double RJ-45 phone port, each side of backboard
Data Outlets: Data 05: Data port, 1 per wall minimum
Communications Special: 2 post cabling: ceiling via rigid conduit
4 post cabling: via flexible conduit

DIV 28 - SECURITY  
CCTV Camera: Fixed CCTV wide-angle lens camera, monitored at CCC.
IDS: IDS & Alarm, UPS, Keypad control inside, adjacent to door, motion detectors, HSS-2
Access Control: Two factor, APL-listed card reader
Duress System: N/A
Security Special Requirements: Tamper resistant enclosures for equipment. Camera must be positioned within room.

DIV 20 - FOR OFFICIAL USE ONLY  
Chapter 14
Chapter 20
Chapter 21

SCHEMATIC PLAN  
Supplemental LAN (SLAN) Room CRG-02-14

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### ROOM SIZE: 80 SF (min)  
N/A

### DIV 08 - DOORS AND WINDOWS  
**Door Type:** B-B-01 Hollow Metal, Full flush, seamless  
**Door Frame:** HM-1 Interior, 12 gauge hollow metal, fully welded

### DIV 09 - CONSTRUCTION AND FINISHES

| Acoustic Separation: | STC 45: Minimum sound isolation |
| Floor Finish: | FF-05 VCT, Dissipative |
| Base: | BF-01 Rubber Base, 4" H |
| Wall Construction: | Wall-05 Gyp Bd 2x panels w/9(10 Ga) Expanded Metal Mesh on Metal Stud, Sound Insulation |
| Wall Finish: | WF-13: Paint, Semi-gloss |
| Ceiling Const. / Finish: | CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted |
| Ceiling Remark: | |
| Ceiling Height: | 9' min |
| Alternate Construction: | Floor: FF-16 Raised Floor with Anti-static VCT Walls: 8" CMU |
| Const Special Requirements: | Installation of expanded wire mesh must be inspected by CBP prior to covering. |

### DIV 10 - FIXED EQUIPMENT

| Fixed Equipment 1: | N/A |
| Fixed Equipment 2: | |
| Fixed Equipment 3: | |

### DIV 21 - FIRE SUPPRESSION

| Sprinkler Head Type: | SPKLR-01 Pendant |

### DIV 22 - PLUMBING

| Fixtures and Fittings 1: | NA |
| Fixtures and Fittings 2: | |
| Fixtures and Fittings 3: | |
| Fixtures and Fittings 4: | |
| Fixtures and Fittings 5: | |
| Fixtures and Fittings 6: | |

### DIV 23 - MECHANICAL

| Supply Register: | S-3: Supply Grille |
| Return Register: | RR-2: Return Grille |
| Temp Summer: | 64° to 80° |
| Temp Winter: | 64° to 80° |
| Temp Control: | Either: Room or Zone Temperature control |
| Humidity Range: | 40% to 60% |
| Special Security: | N/A |

### DIV 24 - ELECTRICAL

| Receptacles: | R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max Oc. min 1 / wall |
| Other Electrical Receptacles: | |
| Electrical Special: | See Other Requirements below. |

### DIV 26 - LIGHTING

| Lighting Fixture: | L-9: Lighting Fixture, Pendant Mounted Industrial Protected |
| Fixture Types Optional/Special: | L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens |
| Lighting Control: | LC-1: Light Switch |
| Lighting Special: | Provide 30 FC at floor level. |
### Furnishings and Equipment

<table>
<thead>
<tr>
<th>DIV 10 - FURNISHINGS AND EQUIPMENT</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 1:</td>
<td>Lockable Equipment Cabinet(s)</td>
</tr>
<tr>
<td>Furnishings and Equipment 2:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

### Security Special Requirements

<table>
<thead>
<tr>
<th>DIV 28 - SECURITY</th>
<th>Chapter 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCTV Camera:</td>
<td>Fixed CCTV wide-angle lens camera, monitored at CCC. Position to monitor door.</td>
</tr>
<tr>
<td>IDS:</td>
<td>IDS &amp; Alarm, UPS, Keypad control inside, adjacent to door, HSS-2</td>
</tr>
<tr>
<td>Access Control:</td>
<td>Two factor, APL-listed card reader</td>
</tr>
<tr>
<td>Duress System</td>
<td>N/A</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

### Other Requirements

- **Power:** UPS (if required). Connections for main power panel, switch panel, and circuit breaker as per calculated load with main disconnect switch. Provide power meter, as required.
- **Equipment:** LAN and Security System hardware, equipment racks, PBX telephone. OIT will furnish a room layout and equipment specifications.
- **Piping/Conduit:** Provide all necessary cabling and conduit to support the equipment furnished and installed by the government. If required for equipment, provide 3/4" FRT Plywood panels, painted, similar to electrical room requirements.

### SCHEMATIC PLAN

**Intermediate Distribution Frame (IDF)**

**Camera to Include Full View of Door**

**Equipment Racks**

**IDS Sensor**

**IDS Keypad**

**Access Control/ Card Reader**

Intermediate Distribution Frame

**CRG-02-15**

**NOT TO SCALE**

For Reference Purposes Only

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The Staff Break Room provides CBP employees an area to prepare and consume meals and to take smaller breaks. This room shall include a refrigerator with ice and water dispensing capability, microwave, sink, and space for built-in wall unit, and base cabinets for storage. The kitchen unit shall have adequate work surface to support individual tasks at meal preparation and an additional counter space with wall and base cabinets shall be used to support items such as toaster ovens, coffee makers, and drying racks. The Staff Break Room shall be located within the Operational Support area.

**DIV 08 - DOORS AND WINDOWS**

- **Door Type:** B-B-01  Hollow Metal, Full flush, seamless
- **Door Frame:** HM-1  Interior, 12 gauge hollow metal, fully welded
- **Door Lockset Group:** A  Mortise Lever Lockset - Classroom Function
- **Door Hardware Cylinder:** A-3: Cylinder, keyed under a CBP Master, like Toilet and PT rooms
- **Door Hardware Group:** D Door Stop, E Door Threshold, K Automatic Door Closer
- **Interior Window:** Interior Aluminum Storefront, 1/4" tempered glazing
- **Special Requirements:** Alt door: A-A wood, full flush

**DIV 09 - CONSTRUCTION AND FINISHES**

- **Acoustic Separation:** STC 45: Minimum sound isolation
- **Floor Finish:** FF-04  VCT
- **Base:** BF-01  Rubber Base, 4" H
- **Wall Construction:** Wall-02  Gypsum Board on Metal Stud, Sound Insulation
- **Wall Finish:** WF-01:  Gypsum Board, 5/8" Regular, Painted
- **Ceiling Const. / Finish:** CF-03:  Acoustic Ceiling Tile, Suspended
- **Ceiling Remark:**
- **Ceiling Height:** 9' min
- **Alternate Construction:** 5/8" Gypsum Ceiling, Painted
- **Const Special Requirements:**

**DIV 10 - FIXED EQUIPMENT**

- **Fixed Equipment 1:** Wall mount for video monitor
- **Fixed Equipment 2:** Bulletin Board
- **Fixed Equipment 3:**

**DIV 21 - FIRE SUPPRESSION**

- **Sprinkler Head Type:** SPKLR-08  Semi-Recessed Pendant
- **Fire Special Requirements:**

**DIV 22 - PLUMBING**

- **Fixtures and Fittings 1:** SK-2:  Countertop Mount Sink - Two Handle Faucet
- **Fixtures and Fittings 2:** FC-1 Two handle faucet, 8" centerset, Gooseneck spout, 1.5 GPM
- **Fixtures and Fittings 3:** DSP-2:  Disposer – Break Room Sink - 3/4 HP Commercial Grade
- **Fixtures and Fittings 4:**
- **Fixtures and Fittings 5:**
- **Fixtures and Fittings 6:**
- **Fixtures and Fittings 7:**
- **Plumbing Special Requirements:** Provide cold water line with shut-off valve to refrigerator.

**DIV 23 - MECHANICAL**

- **Supply Register:** S-2:  Square Ceiling Diffuser
- **Return Register:** RR-2:  Return Grille
- **Temp Summer:** 75° (max)
- **Temp Winter:** 72° (min)
- **Temp Control:** Room:  Dedicated Room Temperature control
- **Humidity Range:** 30% to 60%
- **Special Security:**

**DIV 26 - LIGHTING**

- **Lighting Fixtures:** L-1:  Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp
- **Other Electrical Requirements:**
- **Electrical Special Requirements:** Dedicated receptacles for refrigerator, microwave, water cooler, and vending machine(s)

**DIV 26 - ELECTRICAL**

- **Receptacles:** R-1:  Receptacle, Standard duplex, all walls, spaced at 10 - 0’ max OC, min 1 / wall
- **Other Electrical Receptacles:** R-6A:  Receptacle, Recessed Mounted GFCI, at counter 36" O.C.
- **Electrical Special Requirements:**

**DIV 26 - LIGHTING**

- **Lighting Fixtures:** L-1:  Lighting Fixture, Decorative Surface Mounted or Pendant
- **Lighting Control:** LC-4:  Combination Wall Switch with Occupancy Sensor
- **Lighting Special:** L-14 located at table(s). Provide 30 FC at floor level

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**DIV 10 - FURNISHINGS AND EQUIPMENT**

**Chapter 14**

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Café Tables and Chairs (verify quantity), Telephone, Video Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td>Recycle Bin, Waste Bin</td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td>30&quot; (min) Refrigerator/Freezer, Countertop Microwave, Water Cooler</td>
</tr>
</tbody>
</table>

**OTHER REQUIREMENTS**

CBP Provided equipment: Kitchen unit with food preparation surface, drawers, high and low storage cabinets, refrigerator/freezer with ice maker, built-in microwave, stainless steel sink, and disposal (with wall switch). Should the kitchen unit not have adequate work surface to support individual tasks at meal preparation, a separate counter with wall and base cabinets should be used.

Provide Vending Machine(s).

Where present, FWS, PHS and ICE share the break room. In this case provide access, which precludes transiting the CBP operational support area.

Provide television outlet with service package that includes local media and national news networks.

**DIV 27 - COMMUNICATIONS**

**Chapter 20**

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>Phone 03 Single RJ-45 phone port, Wall mounted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications Special</td>
<td>Wall mounted junction box for cable television</td>
</tr>
</tbody>
</table>

**DIV 28 - SECURITY**

**Chapter 21**

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>N/A</td>
</tr>
<tr>
<td>Access Control:</td>
<td>N/A</td>
</tr>
<tr>
<td>Duress System:</td>
<td>Mushroom Duress button, wall mounted</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

**SCHEMATIC PLAN**

**Staff Break Room**

**CRG-03-01**

**CFDS – 2019 – ROOM DATA SHEETS**

**CRG-03-01**

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A male locker room shall be provided at each facility. The locker room shall include showers, lockers and toilets. Lockers - 14 SF per locker. Shower and plumbing fixtures - number of showers and plumbing fixtures per IPC code and number of officers.

**DIV 08 - DOORS AND WINDOWS**

- **Door Type:** B-B-01 Hollow Metal, Full flush, seamless
- **Door Frame:** HM-1 Interior, 12 gauge hollow metal, fully welded
- **Door Lockset Group:** O Annunciator Mortise Lock with built-in exit trim function & key override
- **Door Hardware Cylinder:** A-3: Cylinder, keyed alike under a CBP Master, like Toilet and PT rooms
- **Door Hardware Group:** D Automatic Door Closer, X Power Transfer Hinge
- **Interior Window:** N/A
- **Exterior Windows:** N/A
- **Exterior Window / Door Glazing:** N/A
- **Special Requirements:**

**DIV 09 - CONSTRUCTION AND FINISHES**

- **Acoustic Separation:** No Special Acoustical Requirement
- **Floor Finish:** FF-07 Ceramic Tile
- **Base:** BF-02 Ceramic Tile Base
- **Wall Construction:** Wall-02 Gypsum Board on Metal Stud, Sound Insulation
- **Wall Finish:** WF-08 Ceramic Tile, Partial height
- **Ceiling Const. / Finish:** CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted
- **Ceiling Remark:** Suspended acoustic tile not permitted.
- **Ceiling Height:** 9'-0"
- **Alternate Construction:**
- **Const Special Requirements:** 5/8" Moisture Resistant Gyp BD at walls. Tile wainscot to 56" H (min), with epoxy grout.

**DIV 10 - FIXED EQUIPMENT**

- **Fixed Equipment 1:** Bench Seating secured to floor
- **Fixed Equipment 2:**
- **Fixed Equipment 3:** (1) bench min. in front of lockers
### FURNISHINGS AND EQUIPMENT

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

Other Fixed Equipment:
- Single tier 18” wide x 24” deep x 72” high powder coated steel lockable (via padlock) lockers with securable compartment, drawer base, and continuous sloped top.
- (1) full height mirror

### COMMUNICATIONS

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>Phone 03  Single RJ-45 phone port, Wall mounted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications Special</td>
<td></td>
</tr>
</tbody>
</table>

### SECURITY

| CCTV Camera:     | N/A                                           |
| Access Control:  | N/A                                           |
| Security Special Requirements: | |

### DURESS SYSTEM

- Mushroom Duress button, wall mounted

### SCHEMATIC PLAN

#### Male Locker Room

- Privacy Curtain and Curtain Rod
- Shower Pan with Low Threshold
- Unial
- Toilet Paper Dispenser
- Toilet
- Bench
- Sink
- Mirror
- Wall Mounted Telephone
- Stacked Full Height Lockers
- Duress Pushbutton

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A female locker room shall be provided at each facility. The locker room shall include showers, lockers and toilets. Lockers - 14 SF per locker. Shower - number of showers and plumbing fixtures per IPC code and number of officers.
### DIV 10 - FURNISHINGS AND EQUIPMENT

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

### DIV 27 - COMMUNICATIONS

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>Phone 03 Single RJ-45 phone port, Wall mounted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications Special:</td>
<td></td>
</tr>
</tbody>
</table>

### DIV 28 - SECURITY

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>N/A</td>
</tr>
<tr>
<td>Access Control:</td>
<td>N/A</td>
</tr>
<tr>
<td>Duress System:</td>
<td>Mushroom Duress button, wall mounted</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

- **Other Fixed Equipment:**
  - Single tier 18” wide X 24” deep X 72” high powder coated steel lockable (via padlock) lockers with securable compartment, drawer base, and continuous sloped top.
  - (1) full height mirror

### SCHEMATIC PLAN

**Female Locker Room**

- **Duress Pushbutton**
- **Stacked Full Height Lockers**
- **Privacy Curtain and Curtain Rod**
- **Shower Pan with Low Threshold**
- **Toilet Paper Dispenser**
- **Toilet**
- **Mirror**
- **Wall Mounted Telephone**
- **Floor Drain**
- **Bench**
- **Sink**

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**NOT TO SCALE**

For Reference Purposes Only

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**CFDS – 2019 – ROOM DATA SHEETS**

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Restrooms for male and female CBP staff shall be provided at each facility. Male and female staff restrooms shall be strategically placed throughout the facility for operational efficiency.

### DIV 08 - DOORS AND WINDOWS

**Room Size**: 60 SF (min)  
**Room Occupancy**: Varies

<table>
<thead>
<tr>
<th>Door Type</th>
<th>B-B-01 Hollow Metal, Full flush, seamless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Frame</td>
<td>HM-1 Interior, 12 gauge hollow metal, fully welded</td>
</tr>
<tr>
<td>Door Lockset Group</td>
<td>O Electrified Mortise Lock with built-in exit trim function &amp; key override</td>
</tr>
<tr>
<td>Door Hardware Cylinder</td>
<td>A-3: Cylinder, keyed alike under a CBP Master, like Toilet and PT rooms</td>
</tr>
<tr>
<td>Door Hardware Group</td>
<td>D Door Stop, K Automatic Door Closer, X Power Transfer Hinge</td>
</tr>
<tr>
<td>Interior Window</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Windows</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### DIV 09 - CONSTRUCTION AND FINISHES

<table>
<thead>
<tr>
<th>Acoustic Separation</th>
<th>STC 45: Minimum sound isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor Finish</td>
<td>FF-07 Ceramic Tile</td>
</tr>
<tr>
<td>Base</td>
<td>BF-02 Ceramic Tile Base</td>
</tr>
<tr>
<td>Wall Construction</td>
<td>Wall-02 Gypsum Board on Metal Stud, Sound Insulation</td>
</tr>
<tr>
<td>Wall Finish</td>
<td>WF-08: Ceramic Tile, Partial height</td>
</tr>
<tr>
<td>Ceiling Const. / Finish</td>
<td>CF-07 Gypsum Board, 5/8&quot; Moisture Resistant, Painted</td>
</tr>
<tr>
<td>Ceiling Remark</td>
<td>Suspended acoustic tile not permitted.</td>
</tr>
<tr>
<td>Ceiling Height</td>
<td>9'-0&quot;</td>
</tr>
</tbody>
</table>

### DIV 10 - FIXED EQUIPMENT

| Fixed Equipment 1  | N/A |
| Fixed Equipment 2 | N/A |
| Fixed Equipment 3 | N/A |

### DIV 21 - FIRE SUPPRESSION

<table>
<thead>
<tr>
<th>Sprinkler Head Type</th>
<th>SPKL-08 Semi-Recessed Pendant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Special Requirements</td>
<td>None</td>
</tr>
</tbody>
</table>

### DIV 22 - PLUMBING

| Fixtures and Fittings 1 | FD-1: Floor Drains - Finished Area |
| Fixtures and Fittings 2 | SK-2: Countertop Mount Sink - Two Handle Faucet |
| Fixtures and Fittings 3 | WC-1: Floor Mounted Toilet - For Flush Valve |
| Fixtures and Fittings 4 | UR-1: Wall Hung Urinal - For Flush Valve |
| Fixtures and Fittings 5 | NA |
| Fixtures and Fittings 6 | NA |
| Fixtures and Fittings 7 | NA |

**Plumbing Special Requirements**: For male restrooms include urinals. For female restrooms utilize only floor mounted toilets.

### DIV 23 - MECHANICAL

<table>
<thead>
<tr>
<th>Supply Register</th>
<th>S-3: Supply Grille</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return Register</td>
<td>RR-2: Return Grille</td>
</tr>
<tr>
<td>Temp Summer</td>
<td>75° (max)</td>
</tr>
<tr>
<td>Temp Winter</td>
<td>72° (min)</td>
</tr>
<tr>
<td>Humidity Range</td>
<td>Special Security: Room at negative pressure, 100 % Exhaust, 10 Air changes minimum.</td>
</tr>
</tbody>
</table>

### DIV 24 - ELECTRICAL

<table>
<thead>
<tr>
<th>Receptacles</th>
<th>R-6: Receptacle, Standard GFCI</th>
</tr>
</thead>
</table>

### DIV 25 - LIGHTING

<table>
<thead>
<tr>
<th>Lighting Fixture</th>
<th>L-8: Lighting Fixture, Recessed Mounted Lensed Down Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixture Types Optional/Special</td>
<td>LC-1: Light Switch, LC-3: Occupancy Sensor</td>
</tr>
<tr>
<td>Lighting Control</td>
<td>LC-1: Light Switch, LC-3: Occupancy Sensor</td>
</tr>
<tr>
<td>Lighting Special</td>
<td>Provide 30 FC at floor level</td>
</tr>
</tbody>
</table>

---

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DIV 10 - FURNISHINGS AND EQUIPMENT  Chapter 14
Furnishings and Equipment 1: N/A
Furnishings and Equipment 2: N/A
Furnishings and Equipment 3: N/A

OTHER REQUIREMENTS

DIV 27 - COMMUNICATIONS  Chapter 20
Phone Outlets: N/A
Data Outlets: N/A
Communications Special

DIV 28 - SECURITY  Chapter 21
CCTV Camera: N/A
IDS: N/A
Access Control: N/A
Duress System: N/A
Security Special Requirements: N/A

SCHEMATIC PLAN  CBP Male and Female Restrooms  CRG-03-04

CBP Staff Restroom
CRG-03-04

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The Lactation Support Room is provided for CBP employees who are nursing mothers. It should be located in proximity to the CBP employee break room and shall not be co-located within a bathroom. The space and fixed equipment within must be ABAAS compliant. This space is provided in compliance with a CBP Directive No. 872.51711-004 Lactation Support Program.

### 3.0 STAFF SUPPORT SPACES

**DIV 08 - DOORS AND WINDOWS**

- **Door Type:** A-A. Wood, Full flush, Solid core, 5 layers
- **Door Frame:** HM-1. Interior, 12 gauge hollow metal, fully welded
- **Door Lockset Group:** B. Mortise Lever Lockset w/ Thumb Turn - Entrance Function
- **Door Hardware Cylinder:** A-3: Cylinder, keyed under a CBP Master, like Toilet and PT rooms
- **Door Hardware Group:** D. Door Stop
- **Interior Window:** N/A
- **Exterior Windows:** N/A
- **Exterior Window / Door Glazing:** N/A
- **Special Requirements:** Exterior windows are optional.

**DIV 09 - CONSTRUCTION AND FINISHES**

- **Acoustic Separation:** No Special Acoustical Requirement
- **Floor Finish:** FF-04. VCT
- **Base:** BF-01. Rubber Base, 4” H
- **Wall Construction:** Wall-02. Gypsum Board on Metal Stud, Sound Insulation
- **Wall Finish:** WF-13: Paint, Semi-gloss
- **Ceiling Const. / Finish:** CF-03: Acoustic Ceiling Tile, Suspended
- **Ceiling Height:** 9’ min
- **Alternate Construction:**
- **Const Special Requirements:**

**DIV 10 - FIXED EQUIPMENT**

- **Fixed Equipment 1:** Paper towel dispenser, Soap dispenser
- **Fixed Equipment 2:**
- **Fixed Equipment 3:**

**DIV 21 - FIRE SUPPRESSION**

- **Sprinkler Head Type:** SPKLR-08. Semi-Recessed Pendant
- **Fire Special Requirements:**

**DIV 22 - PLUMBING**

- **Fixtures and Fittings 1:** SK-2: Countertop Mount Sink - Two Handle Faucet
- **Fixtures and Fittings 2:** FC-2: Battery Powered Faucet, 4” 0.5 GPM
- **Fixtures and Fittings 3:**
- **Fixtures and Fittings 4:**
- **Fixtures and Fittings 5:**
- **Fixtures and Fittings 6:**
- **Fixtures and Fittings 7:**
- **Plumbing Special Requirements:**

**DIV 23 - MECHANICAL**

- **Supply Register:** S-2: Square Ceiling Diffuser
- **Return Register:** RR-2: Return Grille
- **Temp Summer:** 75° (max)
- **Temp Winter:** 72° (min)
- **Temp Control:** Zone: Zone Temperature Control
- **Humidity Range:** 30% to 60%
- **Special Security:** N/A
- **Mech Special Requirements:**

**DIV 26 - ELECTRICAL**

- **Receptacles:** R-1: Receptacle, Standard duplex, all walls, spaced at 10’- 0” max OC, min 1 / wall
- **Other Electrical Receptacles:** R-6A: Receptacle, Recessed Mounted GFCI, at counter 36” O.C.
- **Electrical Special:** One dedicated R-1 for mini-refrigerator

**DIV 26 - LIGHTING**

- **Lighting Fixture:** L-2: Lighting Fixture, Recessed 2x2 or 2x4 Acrylic Lens, 80+ CRI Lamp
- **Fixture Types Optional/Special:**
- **Lighting Control:** LC-4: Combination Wall Switch with Occupancy Sensor
- **Lighting Special:**
**DIV 10 - FURNISHINGS AND EQUIPMENT** | **Chapter 14**
--- | ---
Furnishings and Equipment 1: | Below-counter Refrigerator
Furnishings and Equipment 2: | Waste Bin
Furnishings and Equipment 3: |  

**OTHER REQUIREMENTS**

- **Furnishings and Equipment**: Other fixed equipment: 54" wide x 24 " deep base cabinet with solid surface or plastic laminate countertop and backsplash with single bowl sink base and space for undercounter refrigerator; 24" wide x 30 high x 12 deep upper wall cabinet with two adjustable shelves.
- **Furniture**: One Lounge Chair; one 24" square table next to chair

---

**DIV 27 - COMMUNICATIONS** | **Chapter 20**
--- | ---
Phone Outlets: | N/A
Data Outlets: | Data 01: Single data port
Communications Special |  

---

**DIV 28 - SECURITY** | **Chapter 21**
--- | ---
CCTV Camera: | N/A
IDS: | N/A
Access Control: | N/A
Duress System | Mushroom Duress button, wall mounted
Security Special Requirements: |  

---

**SCHEMATIC PLAN**

**Lactation Support Room**

---

**Lactation Support Room**

---

**CFDS – 2019 – ROOM DATA SHEETS**

**CRG-03-05**

---

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ABAAS compliant public restrooms must be provided and be accessible to visitors and staff. The number of fixtures including diaper-changing facilities will be determined depending on the anticipated public visitors.

**DIV 08 - DOORS AND WINDOWS**

- **Door Type:** B-B  Hollow Metal, Full flush, seamless, 36" x 7'-0" x 1-3/4"
- **Door Frame:** HM-1  Interior, 12 gauge hollow metal, fully welded
- **Door Lockset Group:** B  Mortise Lever Lockset w/ Thumb Turn - Entrance Function
- **Door Hardware Cylinder:** A-3: Cylinder, keyed under a CBP Master, like Toilet and PT rooms
- **Door Hardware Group:** D  Door Stop, K  Automatic Door Closer
- **Interior Window:** N/A
- **Exterior Windows:** N/A
- **Exterior Window / Door Glazing:** N/A
- **Special Requirements:** Door shall swing outward to prevent any potential barricade.

**DIV 09 - CONSTRUCTION AND FINISHES**

- **Acoustic Separation:** STC 45: Minimum sound isolation
- **Floor Finish:** FF-07  Ceramic Tile
- **Base:** BF-02  Ceramic Tile Base
- **Wall Construction:** Wall-08  CMU - 8"
- **Wall Finish:** WF-08:  Ceramic Tile, Partial height
- **Ceiling Const. / Finish:** CF-02:  5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted
- **Ceiling Remark:** Suspended acoustic tile not permitted.
- **Ceiling Height:** 9'-0"
- **Alternate Construction:**
- **Const Special Requirements:** All access panels must be secured through tamperproof screws or locking devices.

**DIV 10 - FIXED EQUIPMENT**

- **Fixed Equipment 1:** Baby Changing Station, SS framed glass Mirror, Soap dispenser, TP dispenser
- **Fixed Equipment 2:** Paper towel dispenser w/ integrated Waste receptacle
- **Fixed Equipment 3:** Hand Dryer with separate Waste Receptacle is optional.

**DIV 21 - FIRE SUPPRESSION**

- **Sprinkler Head Type:** SPKLR-09  Detention Grade Pendant
- **Fire Special Requirements:** None

**DIV 22 - PLUMBING**

- **Fixtures and Fittings 1:** WC-1:  Floor Mounted Toilet - For Flush Valve
- **Fixtures and Fittings 2:** FV-1:  Flush Valve for WC-1 - Sensor operated, hardwired, low flow 1.28 gpf
- **Fixtures and Fittings 3:** UR-1A:  Wall Hung Urinal - For Flush Valve - ABAAS
- **Fixtures and Fittings 4:**
- **Fixtures and Fittings 5:** LAV-1A:  Wall Hung Basin - Battery Powered Faucet
- **Fixtures and Fittings 6:** FC-2 Battery Powered Faucet, 4" 0.5 GPM
- **Fixtures and Fittings 7:** FD-1:  Floor Drains - Finished Area
- **Plumbing Special Requirements:** Min. 1 WC-1A, UR-1, and LAV-1A conform to ABAAS. For male restrooms use urinal.

**DIV 23 - MECHANICAL**

- **Supply Register:** S-6:  Security Diffuser
- **Return Register:** RR-4:  Security Exhaust Grille
- **Temp Summer:** 75° (max)
- **Temp Winter:** 72° (min)
- **Humidity Range:**
- **Special Security:** Negative pressure, 100% exhaust, Min.10 air changes per hour.

**DIV 26 - ELECTRICAL**

- **Receptacles:** N/A
- **Other Electrical Receptacles:**
- **Electrical Special:**

**DIV 26 - LIGHTING**

- **Lighting Fixtures Optional/Special:**
- **Lighting Control:** LC-1:  Light Switch, LC-3:  Occupancy Sensor
- **Lighting Special:** 30 FC at floor. Wall / cove lights above mirror not permitted.
### FURNISHINGS AND EQUIPMENT

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td>N/A</td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### COMMUNICATIONS

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications Special</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### SECURITY

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>N/A</td>
</tr>
<tr>
<td>Access Control:</td>
<td>N/A</td>
</tr>
<tr>
<td>Duress System</td>
<td>N/A</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

### SCHEMATIC PLAN

- **Public Male and Female Restrooms**
  - Occupancy Indicator Over Door
  - Mirror
  - ABAAS Sink
  - Waste Bin
  - Toilet Paper Disp.
  - ABAAS Toilet
  - Diaper Changing Station
  - Grab Bars

---

**CFDS – 2019 – ROOM DATA SHEETS**

**NOT TO SCALE**

For Reference Purposes Only

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Weapons Storage is a secure room for the storage of weapons and use-of-force equipment and related items required to support CBP operations at the location. The Weapons Storage Room is within the Operational Support area.

**Room Code:** CRG-09-07

### 3.0 STAFF SUPPORT SPACES

#### DIV 08 - DOORS AND WINDOWS

- **Door Type:** SD-STD-01.01, Revision G (Amended) (Opaque) 5 min FE
- **Door Frame:** Formed, reinforced and welded steel.
- **Door Lockset Group:** G FF-L-2890B Rated High Security Electromechanical Lock (X-10 or equivalent)
- **Door Hardware Cylinder:** A-2: Cylinder, keyed individually NOT under a CBP Master
- **Door Hardware Group:** B Automatic Door Bottom, J Non-Removable Hinges (outswing), X Power Transfer Hinge
- **Interior Window:** N/A
- **Exterior Windows:** N/A
- **Exterior Window / Door Glazing:** N/A
- **Special Requirements:** see below

#### DIV 09 - CONSTRUCTION AND FINISHES

- **Acoustic Separation:** No Special Acoustical Requirement
- **Floor Finish:** FF-03 Concrete, troweled, uniform texture and appearance, sealed
- **Base:** N/A
- **Wall Construction:** Wall-03 Gypsum Board on #9(10 Ga) Expanded Metal Mesh on Stud, Sound Insulation
- **Wall Finish:** WF-13: Paint, Semi-gloss
- **Ceiling Const. / Finish:** CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted
- **Ceiling Remark:**
  - **Ceiling Height:** 9’ min
- **Alternate Construction:** Wall: 8” CMU - vertical rebar at 16”OC (every block), fully grouted. Ceiling: concrete slab
- **Const Special Requirements:** Installation of expanded wire mesh must be inspected by CBP prior to covering.

#### DIV 10 - FIXED EQUIPMENT

- **Fixed Equipment 1:** Metal Shelving, Heavy Duty, 5 shelf, 18” x 36” x 85”H
- **Fixed Equipment 2:** GSA Class V Safe, minimum of two drawers, FF-L-2740B lock on each drawer
- **Fixed Equipment 3:**
**DIV 10 - FURNISHINGS AND EQUIPMENT**

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>Gun Rack, Lockable, Wall-mount, Handgun Locker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

**OTHER REQUIREMENTS**

One Weapons Storage space is required for the first 15 CBP Officers based on the peak shift size of CBP Officers. Two Weapons/Secure Storage spaces are required if the peak shift size of CBP Officers is between 15 and 40. Three Weapons/Secure Storage spaces are required if the peak shift size of CBP Officers is between 40 and 75. Four Weapons/Secure Storage spaces are required if the peak shift size of CBP Officers is greater than 75.

Equipment: Lockable metal gun lockers (4 ¼" H. X 6 ¼" W. X 16 ¾" D), one for each CBP Officer. Provide separate secure storage for ammunition (if stored in the same room, must be separated from weapons by lockable cage). Gun racks may be floor-mounted. Gun Rack Capacity and size to be determined by OFO HQ.

**DIV 27 - COMMUNICATIONS**

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications Special</td>
<td></td>
</tr>
</tbody>
</table>

**DIV 28 - SECURITY**

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>Fixed CCTV wide-angle lens camera, monitored at CCC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>IDS &amp; Alarm, UPS, Keypad control inside, adjacent to door, HSS-2</td>
</tr>
<tr>
<td>Access Control:</td>
<td>Two factor, APL-listed card reader</td>
</tr>
<tr>
<td>Duress System:</td>
<td>N/A</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td>If not a 24 H operation, CCTV and alarms monitored by port security and local law enforcement. Camera positioned within room.</td>
</tr>
</tbody>
</table>

**SCHEMATIC PLAN**

*Weapons Storage*

- Class V Safe
- Industrial Shelving
- Lockable Gun Rack
- IDS Sensor
- IDS Keypad
- Camera to Include Full View of Door
- Hand Gun Lockers
- Access Control/Card Reader

**NOT TO SCALE**

*For Reference Purposes Only*
The Day Kennel is a suite of rooms incorporating functions of the Canine Team Area, Kennel Runs (4ft wide by 6ft long), and Kennel Room. Day Kennel is used for temporarily housing canines, preparing canine food, storing dry canine food, and providing grooming and animal health care. Canine kennels are constructed at all CBP facilities that have permanently assigned facility operators. Day Kennels must be adjacent to Canine office; Out of public view; Locate with direct access to the CBP inspection areas where the dogs work most often, and have secure access to government vehicle parking. The number of Kennel Runs will be determined during planning phase.

**DIV 08 - DOORS AND WINDOWS**

**Door Type:** B-B-01 Hollow Metal, Full flush, seamless

**Door Frame:** HM-2 Interior, 12 gauge hollow metal, fully welded, with sidelite

**Door Lockset Group:** C Cylindrical Lever Lockset - Storeroom Function

**Doorknob:** A-1: Cylinder, keyed individually under a CBP Master

**Doorknob Group:** D Door Stop, E Door Threshold, K Automatic Door Closer

**Interior Window:** N/A

**Exterior Windows:** Aluminum Exterior Storefront System

**Exterior Window / Door Glazing:** GL-02 Low-E Insulating Glazing, tinted

**Special Requirements:** Doors: Moisture resistant epoxy coating

**DIV 09 - CONSTRUCTION AND FINISHES**

**Acoustic Separation:** STC 55: Excellent

**Floor Finish:** FF-10 Concrete, w/ seamless epoxy-resin flooring system, slope to floor drain(s).

**Base:** BF-04 Integral with seamless flooring, 8" H

**Wall Construction:** Wall-08 CMU - 8"

**Wall Finish:** WF-15: Paint, Epoxy, Semi-gloss

**Ceiling Const. / Finish:** CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted

**Ceiling Remark:** Enamel paint

**Ceiling Height:** 9' min

**Alternate Construction:** Exposed with two coats of epoxy paint required on deck and exposed pipes

**Const Special Requirements:** Slip resistant floor not abrasive to animal feet.
DIV 10 - FURNISHINGS AND EQUIPMENT | Chapter 14
--- | ---
**Furnishings and Equipment 1:** 30" (min) Refrigerator/Freezer, Countertop Microwave, Telephone
**Furnishings and Equipment 2:** ABS Dog Resting Bench with Bed
**Furnishings and Equipment 3:**

**OTHER REQUIREMENTS**
Fixed equipment: 15 LF counter with base cabinets, wall cabinets, lockable cabinet for storage of medicine/vaccines, and full height backsplash to underside of wall cabinets. All surfaces stainless steel. Large loose stainless drying rack on built-in sloped-to-sink surface at one side of double sink; Full size refrigerator for medications and dietary foods; anti-fatigue mats at sink area. Increase counter / Cabinet footage with increase in room size. 30" x 60" Stainless steel adjustable height table with stainless steel eyelets to strap dogs down to table during health checks and grooming. There may be no sharp edges or points. Trench at rear wall of the room/cage with a clear opening 2" - 3" for flushing fecal matter into the trough. Trench will be 30" wide and slope to drain at one end. Walkway behind trench. Provide floor drain with 6" pipe and grinder/ejector pump in drainage trench behind kennels. Provide grinder/ejector pump control switch outside of kennels in easily accessible area. Lockable man gate at front and rear of runs.

DIV 27 - COMMUNICATIONS | Chapter 20
--- | ---
**Phone Outlets:** Phone 03 Single RJ-45 phone port, Wall mounted
**Data Outlets:** N/A
**Communications Special Requirements:**

DIV 28 - SECURITY | Chapter 21
--- | ---
**CCTV Camera:** Fixed CCTV wide-angle lens camera(s). Position: monitor inside of door & kennel runs.
**IDS:** N/A
**Access Control:** Two factor, APL-listed card reader, DPS
**Duress System:** Mushroom Duress button, wall mounted
**Special Requirements:** Duress activated emergency strobe light outside of door.

**SCHEMATIC PLAN**
Day Kennel CRG-03-08

---

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The Canine Storage is for the storage of miscellaneous non-sensitive items necessary to operate the kennel and provide animal care. It may serve as the vestibule to other storage areas, which are located outside of animal occupied areas. The Canine Storage is adjacent to other canine spaces.

### ROOM SIZE: ROOM OCCUPANCY

| 80 SF | N/A |

### DIV 08 - DOORS AND WINDOWS | Chapter 14

| Door Type: | B-B-01 Hollow Metal, Full flush, seamless |
| Door Frame: | HM-1 Interior, 12 gauge hollow metal, fully welded |
| Door Lockset Group: | C Cylindrical Lever Lockset - Storeroom Function |
| Door Hardware Cylinder: | A-1: Cylinder, keyed individually under a CBP Master |
| Door Hardware Group: | D Door Stop, K Automatic Door Closer |
| Interior Window: | N/A |
| Exterior Windows: | N/A |
| Exterior Window / Door Glazing: | N/A |
| Special Requirements: | |

### DIV 09 - CONSTRUCTION AND FINISHES | Chapter 14

| Acoustic Separation: | No Special Acoustical Requirement |
| Floor Finish: | FF-10 Concrete, w/ seamless epoxy-resin flooring system, slope to floor drain(s) |
| Base: | BF-04 Integral with seamless flooring, 8" H |
| Wall Construction: | Wall-02 Gypsum Board on Metal Stud, Sound Insulation |
| Wall Finish: | WF-13: Paint, Semi-gloss |
| Ceiling Const / Finish: | CF-01: Gypsum Board, 5/8" Regular, Painted |
| Ceiling Remark: | Ceiling: painted ½" gypsum board or open structure, two coats of epoxy paint on deck/pipes |
| Ceiling Height: | 9' min |
| Alternate Construction: | Walls: 8" CMU |
| Const Special Requirements: | All joints, corners and edges must be sealed to prevent cross-contamination of scents. |

### DIV 10 - FIXED EQUIPMENT | Chapter 14

| Fixed Equipment 1: | Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H |
| Fixed Equipment 2: | |
| Fixed Equipment 3: | |

### DIV 21 - FIRE SUPPRESSION | Chapter 16

| Sprinkler Head Type: | SPKLR-01 Pendant |
| Fire Special Requirements: | |

### DIV 22 - PLUMBING | Chapter 17

| Fixtures and Fittings 1: | FD-1: Floor Drains - Finished Area |
| Fixtures and Fittings 2: | |
| Fixtures and Fittings 3: | |
| Fixtures and Fittings 4: | |
| Fixtures and Fittings 5: | |
| Fixtures and Fittings 6: | |
| Plumbing Special Requirements: | |

### DIV 23 - MECHANICAL | Chapter 18

| Supply Register: | S-2: Square Ceiling Diffuser |
| Return Register: | RR-2: Return Grille |
| Temp Summer: | 75° (max) |
| Temp Winter: | 72° (min) |
| Temp Control: | Room: Dedicated Room Temperature control |
| Humidity Range: | 30% to 60% |
| Special Security: | N/A |
| Mech Special Requirements: | |

### DIV 26 - ELECTRICAL | Chapter 19

| Receptacles: | R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max Oc, min 1 / wall |
| Other Electrical Receptacles: | |
| Electrical Special: | Mount all receptacles 40" AFF. |

### DIV 26 - LIGHTING | Chapter 19

| Lighting Fixture: | L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens |
| Fixture Types Optional/Special: | L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens |
| Lighting Control: | LC-4: Combination Wall Switch with Occupancy Sensor |
| Lighting Special | Provide 50 FC at working surface |
### DIV 10 - FURNISHINGS AND EQUIPMENT | Chapter 14

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

### DIV 27 - COMMUNICATIONS | Chapter 20

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications Special</td>
<td></td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

### DIV 28 - SECURITY | Chapter 21

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>N/A</td>
</tr>
<tr>
<td>Access Control:</td>
<td>N/A</td>
</tr>
<tr>
<td>Duress System</td>
<td>N/A</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

### SCHEMATIC PLAN

**Canine Storage**

*Heavy Duty Metal Shelves*

*Floor Drain*

**Canine Storage General**

*NOT TO SCALE*
The canine team area is a room where officers can wash and dry canines in convenient proximity to holding cages and runs and perform necessary health care and grooming. Nearby exterior access is desirable. The washroom function may be included as an alcove adjoining the kennel / run area, as directed by the FOF PMO PM.

### 3.0 STAFF SUPPORT SPACES

#### ROOM SIZE: ROOM OCCUPANCY

<table>
<thead>
<tr>
<th>Size</th>
<th>Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 SF</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### DIV 08 - DOORS AND WINDOWS

<table>
<thead>
<tr>
<th>Type</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Type</td>
<td>B-B-01 Hollow Metal, Full flush, seamless</td>
</tr>
<tr>
<td>Door Frame</td>
<td>HM-2 Interior, 12 gauge hollow metal, fully welded, with sidelite</td>
</tr>
<tr>
<td>Lockset Group</td>
<td>C Cylindrical Lever Lockset - Storeroom Function</td>
</tr>
<tr>
<td>Cylinder</td>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
</tr>
<tr>
<td>Hardware Group</td>
<td>D Door Stop, E Door Threshold, K Automatic Door Closer</td>
</tr>
<tr>
<td>Interior Window</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Windows</td>
<td>See Other Requirements</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing</td>
<td>GL-02 Low-E Insulating Glazing, tinted</td>
</tr>
<tr>
<td>Special Requirements</td>
<td>Doors: Moisture resistant epoxy coating</td>
</tr>
</tbody>
</table>

#### DIV 09 - CONSTRUCTION AND FINISHES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic Separation</td>
<td>STC 55: Excellent</td>
</tr>
<tr>
<td>Floor Finish</td>
<td>FF-10 Concrete, w/ seamless epoxy-resin flooring system, slope to floor drain(s).</td>
</tr>
<tr>
<td>Base</td>
<td>BF-04 Integral with seamless flooring, 8&quot; H</td>
</tr>
<tr>
<td>Wall Construction</td>
<td>Wall-08 CMU - 8&quot;</td>
</tr>
<tr>
<td>Wall Finish</td>
<td>WF-15: Paint, Epoxy, Semi-gloss</td>
</tr>
<tr>
<td>Ceiling Const. / Finish</td>
<td>CF-07 Gypsum Board, 5/8&quot; Moisture Resistant, Painted</td>
</tr>
<tr>
<td>Ceiling Remark</td>
<td>Enamel paint</td>
</tr>
<tr>
<td>Ceiling Height</td>
<td>9' min</td>
</tr>
<tr>
<td>Alternate Construction</td>
<td>Exposed with two coats of epoxy paint required on deck and exposed pipes</td>
</tr>
<tr>
<td>Const Special Requirements</td>
<td>Slip resistant floor not abrasive to animal feet.</td>
</tr>
</tbody>
</table>

#### DIV 10 - FIXED EQUIPMENT

<table>
<thead>
<tr>
<th>Equipment 1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment 2</td>
<td></td>
</tr>
<tr>
<td>Equipment 3</td>
<td>Retractable hose at center or at both ends of room</td>
</tr>
</tbody>
</table>

### DIV 21 - FIRE SUPPRESSION

#### Fire Special Requirements:

<table>
<thead>
<tr>
<th>Type</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprinkler Head Type</td>
<td>SPKLR-01 Pendant</td>
</tr>
</tbody>
</table>

#### DIV 22 - PLUMBING

| Fittings 1     | HB-1: Hose and Supply Boxes - Hose Valve - Bent Nose, Freeze Proof           |
| Fittings 2     | K-9 Tub Stainless steel tub on legs with ramp                                |
| Fittings 3     | FD-1: Floor Drains - Finished Area                                           |

#### Plumbing Specials:

- Provide hot and cold water connection to HB-1.
- Provide hose reel to connect to HB-1.

### DIV 23 - MECHANICAL

#### Supply Register:

| S-2: Square Ceiling Diffuser |

#### Temp

- **Summer**: 75° (max)
- **Winter**: 72° (min)

#### Room: Dedicated Room Temperature control

- **Humidity Range**: 30% to 60%
- **Special Security**: N/A

### DIV 26 - ELECTRICAL

#### Other Electrical Receptacles:

- R-6B: Receptacle, Standard GFCI, 40" AFF, 42" max O.C., all walls

### DIV 26 - LIGHTING

#### Lighting Fixtures

- L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens

#### Lighting Control

- LC-5: Combination Wall Switch with Occupancy Sensor & Dimmer

#### Lighting Specials

- Provide 50 FC at 36" AFF
## DIV 10 - FURNISHINGS AND EQUIPMENT | Chapter 14

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

**Fixed equipment:**
- Stainless steel tub on legs (or set in a low platform) with ramp access adequate to wash a large canine. Provide wall mounted stainless steel shelf and cabinets.
- 30" x 60" Stainless steel adjustable height table with stainless steel eyelets to strap dogs down to table during health checks and grooming.

**Windows:** optional, preferred if on exterior wall.

There may be no sharp edges or points within the Kennel Runs.

---

## DIV 27 - COMMUNICATIONS | Chapter 20

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>Phone 03 Single RJ-45 phone port, Wall mounted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications Special</td>
<td></td>
</tr>
</tbody>
</table>

## DIV 28 - SECURITY | Chapter 21

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>N/A</td>
</tr>
<tr>
<td>Access Control:</td>
<td>N/A</td>
</tr>
<tr>
<td>Duress System:</td>
<td>Mushroom Duress button, wall mounted</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td>Duress activated emergency strobe light outside of door.</td>
</tr>
</tbody>
</table>

---

### SCHEMATIC PLAN

**Canine Team Area**

**CRG-03-10**

- Stainless Steel Table w/ Eyelets
- Duress Pushbutton
- Dog Tub w/ Ramp
- Hot and Cold Water Supply Box
- Retractable Hose Rack
- Stainless Steel Shelving
- 8" CMU Walls
- Audible/Visual Duress Alarm Indicator Over Door

---

**Canine Team Area**

**CRG-03-10**

**NOT TO SCALE**

For Reference Purposes Only
Laundry Room

The laundry room should be an area or alcove with separate stackable washer and dryer units for the washing and drying of hard narcotics training aids, soft narcotics training aids, currency training aids, and general fabrics. A separate washer/dryer will be required for each training discipline and there may be no cross contamination between the disciplines. Training aid specific washers and dryers will only be required at facilities that house/employ that particular discipline of canine.

DIV 08 - DOORS AND WINDOWS

- **Door Type**: B-B-01 Hollow Metal, Full flush, seamless
- **Door Frame**: HM-1 Interior, 12 gauge hollow metal, fully welded
- **Door Lockset Group**: C Cylindrical Lever Lockset - Storeroom Function
- **Door Hardware Cylinder**: A-1: Cylinder, keyed individually under a CBP Master
- **Door Hardware Group**: D Door Stop, K Automatic Door Closer
- **Interior Window**: N/A
- **Exterior Windows**: Aluminum Framed Windows
- **Exterior Window / Door Glazing**: GL-02 Low-E Insulating Glazing, tinted
- **Special Requirements**: Doors: Moisture resistant epoxy coating. Exterior windows are optional

DIV 09 - CONSTRUCTION AND FINISHES

- **Acoustic Separation**: No Special Acoustical Requirement
- **Floor Finish**: FF-10 Concrete, w/ seamless epoxy-resin flooring system, slope to floor drain(s).
- **Base**: BF-01 Rubber Base, 4” H
- **Wall Construction**: Wall-04 Gypsum Board on Metal Stud, uninsulated
- **Wall Finish**: WF-04: Gypsum Board, 5/8” Moisture Resistant, Painted
- **Ceiling Const. / Finish**: CF-07 Gypsum Board, 5/8” Moisture Resistant, Painted
- **Ceiling Remark**: Enamel paint
- **Ceiling Height**: 9’ min
- **Alternate Construction**: Exposed with two coats of epoxy paint required on deck and exposed pipes
- **Const Special Requirements**: Match Kennel Run flooring.

DIV 10 - FIXED EQUIPMENT

- **Fixed Equipment 1**: Stainless Steel Open Wall Shelving
- **Fixed Equipment 2**: Washer / Dryer, Full size Stacking
- **Fixed Equipment 3**: Stainless Steel Open Wall Shelving

DIV 21 - FIRE SUPPRESSION

- **Sprinkler Head Type**: SPKLR-01 Pendant

DIV 22 - PLUMBING

- **Fixtures and Fittings 1**: FD-1: Floor Drains - Finished Area
- **Fixtures and Fittings 2**: Fixtures and Fittings 3
- **Fixtures and Fittings 4**: Fixtures and Fittings 5
- **Fixtures and Fittings 6**: Fixtures and Fittings 7

DIV 23 - MECHANICAL

- **Supply Register**: S-2: Square Ceiling Diffuser
- **Return Register**: RR-2: Return Grille
- **Temp Summer**: 75° (max)
- **Temp Winter**: 72° (min)
- **Temp Control**: Room: Dedicated Room Temperature control
- **Humidity Range**: 30% to 60%
- **Special Security**: N/A

DIV 26 - ELECTRICAL

- **Receptacles**: R-6: Receptacle, Standard GFCI
- **Other Electrical Receptacles**: See Other Requirements

DIV 26 - LIGHTING

- **Lighting Fixture**: L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens
- **Fixture Types Optional/Special**: L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens
- **Lighting Control**: LC-2: Dimmer Switch
- **Lighting Special**: Provide 50 FC at working surface.
Furnishings and Equipment 1:

Furnishings and Equipment 2:

Furnishings and Equipment 3:

Phone Outlets:  N/A

Data Outlets:  N/A

Communications Special

CCTV Camera:  N/A

IDS:  N/A

Access Control:  N/A

Duress System:  N/A

Security Special Requirements:

Provide two 120V normal power GFCI receptacles; one for general purpose and one for washer mounted at 40” AFF. Provide dedicated 240V receptacle for each dryer mounted at 40” AFF. Verify quantity of Washer/Dryers. Room at 100SF would accommodate 2 sets. Provide one washer supply/drain box and one dryer vent per washer/dryer pair. Provide and dedicate a washer/dryer to be exclusively used to wash/dry training aids for each discipline of dog used in that facility. Separate washer(s)/dryer(s) are dedicated to Hard Narcotics, Soft Narcotics, and Currency Training Aids. One set of general purpose washer/dryer will be provided to wash grooming towels and other non-training aid related items. Agriculture training aids may be cleaned in the general purpose washer/dryer. There may be no cross-contamination. Include signage for each of the washer/dryer units to indicate which discipline it is used for or if it is a general purpose washer/dryer unit.
The Emergency Generator provides back-up power when electric power from the local utility is interrupted. Facilities must be provided with emergency back-up power for 150% of the present design loads. The cargo facility must be able to be operational for an extended period of time. The emergency generator should be located outside in an enclosed shelter, if possible, or be located within the building support space area of the building (adjacent to the fuel storage space, and not adjacent to vehicle pathways or primary inspection points).

200 SF (min) per cargo facility; plus additional 150 SF for every additional 25,000 OSF of total cargo facility calculated OSF (located upon design).

<table>
<thead>
<tr>
<th>DIV 08 - DOORS AND WINDOWS</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Type:</td>
<td>B-B-01 Hollow Metal, Full flush, seamless</td>
</tr>
<tr>
<td>Door Frame:</td>
<td>HM-1 Interior, 12 gauge hollow metal, fully welded</td>
</tr>
<tr>
<td>Door Lockset Group:</td>
<td>N Electrified Mortise Lock with Lever set and built-in REX function &amp; key override</td>
</tr>
<tr>
<td>Door Hardware Cylinder:</td>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
</tr>
<tr>
<td>Door Hardware Group:</td>
<td>D Door Stop, K Automatic Door Closer, X Power Transfer Hinge</td>
</tr>
<tr>
<td>Interior Window:</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Windows:</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing:</td>
<td>N/A</td>
</tr>
<tr>
<td>Special Requirements:</td>
<td>Hardware: C - Door Coordinator at double doors, J - Non-Removable Hinges (outswing)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 09 - CONSTRUCTION AND FINISHES</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic Separation:</td>
<td>N/A</td>
</tr>
<tr>
<td>Floor Finish:</td>
<td>FF-03 Concrete, troweled, uniform texture and appearance, sealed</td>
</tr>
<tr>
<td>Base:</td>
<td>N/A</td>
</tr>
<tr>
<td>Wall Construction:</td>
<td>Wall-08 CMU - 8&quot;</td>
</tr>
<tr>
<td>Wall Finish:</td>
<td>WF-13: Paint, Semi-gloss</td>
</tr>
<tr>
<td>Ceiling Const. / Finish:</td>
<td>CF-13 HD Galv Chain Link Roof</td>
</tr>
<tr>
<td>Ceiling Remark:</td>
<td></td>
</tr>
<tr>
<td>Ceiling Height:</td>
<td>9’ min</td>
</tr>
<tr>
<td>Alternate Construction:</td>
<td>Prefabricated metal enclosure. HD Galv Chain Link Fence - Coordinate wall construction w/ SMD</td>
</tr>
<tr>
<td>Const Special Requirements:</td>
<td>Wall Height must exceed the total height of the generator as to conceal the generator.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 10 - FIXED EQUIPMENT</th>
<th>Chapter 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Equipment 1:</td>
<td>N/A</td>
</tr>
<tr>
<td>Fixed Equipment 2:</td>
<td>Generator, back-up generator unit components, fuel storage.</td>
</tr>
<tr>
<td>Fixed Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 21 - FIRE SUPPRESSION</th>
<th>Chapter 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprinkler Head Type:</td>
<td>SPKLR-01 Pendant</td>
</tr>
<tr>
<td>Fire Special Requirements:</td>
<td>Provide automatic smoke detectors in accordance with NFPA 72.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 22 - PLUMBING</th>
<th>Chapter 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixtures and Fittings 1:</td>
<td>NA</td>
</tr>
<tr>
<td>Fixtures and Fittings 2:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 3:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 4:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 5:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 6:</td>
<td></td>
</tr>
<tr>
<td>Fixtures and Fittings 7:</td>
<td></td>
</tr>
<tr>
<td>Plumbing Special</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 23 - MECHANICAL</th>
<th>Chapter 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Register:</td>
<td>N/A</td>
</tr>
<tr>
<td>Return Register:</td>
<td>N/A</td>
</tr>
<tr>
<td>Temp Summer:</td>
<td>N/A</td>
</tr>
<tr>
<td>Temp Winter:</td>
<td>N/A</td>
</tr>
<tr>
<td>Humidity Range:</td>
<td>N/A</td>
</tr>
<tr>
<td>Special Security:</td>
<td>N/A</td>
</tr>
<tr>
<td>Mech Special Requirements:</td>
<td>Coordinate combustion air and exhaust air requirements for louver sizing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 26 - ELECTRICAL</th>
<th>Chapter 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptacles: R-1: Receptacle, Standard duplex, all walls, spaced at 10-0” max OC, min 1 / wall</td>
<td></td>
</tr>
<tr>
<td>Other Electrical Receptacles:</td>
<td></td>
</tr>
<tr>
<td>Electrical Special:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIV 26 - LIGHTING</th>
<th>Chapter 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting Fixture:</td>
<td>L-9: Lighting Fixture, Pendent Mounted Industrial Protected</td>
</tr>
<tr>
<td>Fixture Types Optional/Special:</td>
<td></td>
</tr>
<tr>
<td>Lighting Control:</td>
<td>LC-1: Light Switch, LC-3: Occupancy Sensor</td>
</tr>
<tr>
<td>Lighting Special:</td>
<td>Provide 30 FC at floor level.</td>
</tr>
</tbody>
</table>
DIV 10 - FURNISHINGS AND EQUIPMENT  Chapter 14
Furnishings and Equipment 1:  N/A
Furnishings and Equipment 2:  
Furnishings and Equipment 3:  

OTHER REQUIREMENTS
Special Construction Note: If the generator is located outside, provide an 8’ high fence with an additional 2’ slanted barbed wire top matching the perimeter fence. Provide chain link gate with high security lock and CCTV coverage.

Requirement for 150% capacity must be evaluated on a Port-specific basis. See Chapter 19 for a complete discussion of emergency power considerations.

All walls/ sides must be set a minimum of 4ft away (on all sides) from the emergency generator/ fuel tank.

DIV 27 - COMMUNICATIONS  Chapter 20
Phone Outlets:  Phone 03 Single RJ-45 phone port, Wall mounted
Data Outlets:  N/A
Communications Special:  Provide data connection to Building Automation System.

DIV 28 - SECURITY  Chapter 21
CCTV Camera:  Fixed CCTV wide-angle lens camera, monitored at CCC.
IDS:  N/A
Access Control:  Two factor, APL-listed card reader, DPS
Duress System:  N/A
Security Special Requirements:  

SCHEMATIC PLAN  Emergency Generator  CRG-04-01

Notes:
1. Free standing generator with built-in enclosure is shown.
2. Generators contained within buildings require design for large intake and exhaust air systems in addition to enclosed exhaust.
3. Design shall include requirement for fuel tank (not shown).

Emergency Generator  CRG-04-01  NOT TO SCALE  For Reference Purposes Only
The Mechanical Room provides a combined space for all utilities including the HVAC and domestic hot water equipment, the water treatment system. Mechanical Room is located adjacent to the building support spaces. Provide one room at 5% (minimum) of the gross square footage of the cargo facility.

**DIV 08 - DOORS AND WINDOWS**  Chapter 14

**Door Type:** B-B-01 Hollow Metal, Full flush, seamless

**Door Frame:** HM-1 Interior, 12 gauge hollow metal, fully welded

**Door Latchset Group:** N Electrified Mortise Lock with Lever set and built-in REX function & key override

**Door Hardware Cylinder:** A-1: Cylinder, keyed individually under a CBP Master

**Door Hardware Group:** D Door Stop, G BMAS-UL 634 Level 2, J Non-Removable Hinges (outswing)

**Interior Window:** N/A

**Exterior Windows:** N/A

**Exterior Window / Door Glazing:** N/A

**Special Requirements:** X: Power Transfer Hinge, K: Automatic Door Closer

**DIV 09 - CONSTRUCTION AND FINISHES**  Chapter 14

**Acoustic Separation:** STC 45: Minimum sound isolation

**Floor Finish:** FF-03 Concrete, troweled, uniform texture and appearance, sealed

**Base:** N/A

**Wall Construction:** Wall-08 CMU - 8"

**Wall Finish:** WF-13: Paint, Semi-gloss

**Ceiling Const / Finish:** CF-04: Exposed Structure, No Ceiling

**Ceiling Remark:** Exposed with two coats of paint required on deck and exposed pipes.

**Ceiling Height:** 9’ min

**Alternate Construction:**

**Const Special Requirements:** Slope floor to drain

**DIV 10 - FIXED EQUIPMENT**  Chapter 14

**Fixed Equipment 1:** Mechanical equipment.

**DIV 21 - FIRE SUPPRESSION**  Chapter 16

**Sprinkler Head Type:** SPKLR-01 Pendant

**Fire Special Requirements:**

**DIV 22 - PLUMBING**  Chapter 17

**Fixtures and Fittings 1:** FD-2: Floor Drains - Vandal proof, 6”

**Fixtures and Fittings 2:**

**Fixtures and Fittings 3:**

**Fixtures and Fittings 4:**

**Fixtures and Fittings 5:**

**Fixtures and Fittings 6:**

**Fixtures and Fittings 7:**

**Plumbing Special:** Provide funnel fittings or partial grates for FD-2 as required by Mechanical equipment.

**DIV 23 - MECHANICAL**  Chapter 18

**Supply Register:** S-1: Perforated Plate Diffuser

**Return Register:** RR-2: Return Grille

**Temp Summer:** 75° (max)

**Temp Winter:** 72° (min)

**Temp Control:** Room: Dedicated Room Temperature control

**Humidity Range:** 50% to 60%

**Special Security:** N/A

**Mech Special Requirements:** Filtered (HEPA) Exhaust, Room at negative pressure,

**DIV 26 - LIGHTING**  Chapter 19

**Lighting Fixtures:** L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens

**Lighting Fixtures Optional/Special:** L-9: Lighting Fixture, Pendant Mounted Industrial Protected

**Lighting Control:** LC-1: Light Switch, LC-3: Occupancy Sensor

**Lighting Special:** Provide 30 FC at floor level

**DIV 26 - ELECTRICAL**  Chapter 19

**Receptacles:** R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0” max OC, min 1 / wall, R-2: Receptacle, Surface Mounted

**Other Electrical Receptacles:**

**Electrical Special:** Convenience receptacles as required by mechanical equipment
### DIV 10 - FURNISHINGS AND EQUIPMENT

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3</td>
<td></td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

- **Special Grounding:** As required by equipment manufacturer.
- **UPS (Surge Protection):** As required by equipment manufacturer.
- **Emergency Power:** Yes.

### DIV 27 - COMMUNICATIONS

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>Phone 01 Single RJ-45 phone port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>Data 01: Single data port</td>
</tr>
<tr>
<td>Communications Special</td>
<td>Phone and Data for Building Automation System, locate near equipment controls.</td>
</tr>
</tbody>
</table>

### DIV 28 - SECURITY

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>Fixed CCTV wide-angle lens camera, monitored at CCC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>N/A</td>
</tr>
<tr>
<td>Access Control:</td>
<td>N/A</td>
</tr>
<tr>
<td>Duress System:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

| Security Special Requirements: | |

---

### SCHEMATIC PLAN

- **Mechanical Room**
- **Mechanical Room CRG-04-02**

---

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The Janitor Room is provided for the storage of essential cleaning equipment and cleaning supplies used by the janitorial staff in maintaining the building. Janitor Room should be provided where a closet sized space is not sufficient for the storage of cleaning and restroom supplies. Janitor Room is located adjacent to the support spaces within the building, preferably near the Staff Restrooms or Break Room.

**DIV 08 - DOORS AND WINDOWS**

<table>
<thead>
<tr>
<th>Door Type</th>
<th>B-B-01 Hollow Metal, Full flush, seamless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Frame</td>
<td>HM-1 Interior, 12 gauge hollow metal, fully welded</td>
</tr>
<tr>
<td>Door Lockset Group</td>
<td>C Cylindrical Lever Lockset - Storeroom Function</td>
</tr>
<tr>
<td>Door Hardware Cylinder</td>
<td>A-3: Cylinder, keyed under a CBP Master, like Toilet and PT rooms</td>
</tr>
<tr>
<td>Door Hardware Group</td>
<td>D Door Stop, K Automatic Door Closer</td>
</tr>
<tr>
<td>Interior Window</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Windows</td>
<td>N/A</td>
</tr>
<tr>
<td>Exterior Window / Door Glazing</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**DIV 09 - CONSTRUCTION AND FINISHES**

<table>
<thead>
<tr>
<th>Acoustic Separation</th>
<th>No Special Acoustical Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor Finish</td>
<td>FF-03 Concrete, troweled, uniform texture and appearance, sealed</td>
</tr>
<tr>
<td>Base</td>
<td>BF-01 Rubber Base, 4&quot; H</td>
</tr>
<tr>
<td>Wall Construction</td>
<td>Wall-04 Gypsum Board on Metal Stud, uninsulated</td>
</tr>
<tr>
<td>Wall Finish</td>
<td>WF-04: Gypsum Board, 5/8&quot; Moisture Resistant, Painted</td>
</tr>
<tr>
<td>Ceiling Const. / Finish</td>
<td>CF-01: Gypsum Board, 5/8&quot; Regular, Painted</td>
</tr>
<tr>
<td>Ceiling Height</td>
<td>9' min</td>
</tr>
<tr>
<td>Alternate Construction</td>
<td>Walls: 8&quot; CMU</td>
</tr>
<tr>
<td>Const Special Requirements</td>
<td>Semi-gloss paint at walls</td>
</tr>
</tbody>
</table>

**DIV 10 - FIXED EQUIPMENT**

| Fixed Equipment 1: | Wall-mounted Broom/Mop Holder |
| Fixed Equipment 2: | Metal Shelving, Standard Duty, 5 shelf, 12” x 36” x 85"H |
| Fixed Equipment 3: | (3) min shelves, secured to wall. |

**DIV 21 - FIRE SUPPRESSION**

| Sprinkler Head Type | SPKLR-08 Semi-Recessed Pendant |

**DIV 22 - PLUMBING**

| Fixtures and Fittings 1: | MS-1: Service / Mop Sink - Two Handle Faucet |
| Fixtures and Fittings 2: | FC-3 Wall mounted Two handle faucet |
| Fixtures and Fittings 3: | FD-1: Floor Drains - Finished Area |
| Fixtures and Fittings 4: | |
| Fixtures and Fittings 5: | |
| Fixtures and Fittings 6: | |
| Fixtures and Fittings 7: | |
| Plumbing Special | |

**DIV 23 - MECHANICAL**

| Supply Register | S-3: Supply Grille |
| Return Register | RR-2: Return Grille |
| Temp Summer     | 75° (max) |
| Temp Winter     | 72° (min) |
| Temp Control    | N/A |
| Humidity Range  | 30% to 60% |
| Special Security | N/A |

**DIV 26 - ELECTRICAL**

| Receptacles | R-6: Receptacle, Standard GFCI |
| Other Electrical Receptacles | |
| Electrical Special | |

**DIV 26 - LIGHTING**

| Lighting Fixture | L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens |
| Fixture Types Optional/Special | |
| Lighting Control | LC-4: Combination Wall Switch with Occupancy Sensor |
| Lighting Special | Provide 20 FC at floor level |
### DIV 10 - FURNISHINGS AND EQUIPMENT  
Chapter 14

<table>
<thead>
<tr>
<th>Furnishings and Equipment 1:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishings and Equipment 2:</td>
<td></td>
</tr>
<tr>
<td>Furnishings and Equipment 3:</td>
<td></td>
</tr>
</tbody>
</table>

### DIV 27 - COMMUNICATIONS  
Chapter 20

<table>
<thead>
<tr>
<th>Phone Outlets:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Outlets:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### DIV 28 - SECURITY  
Chapter 21

<table>
<thead>
<tr>
<th>CCTV Camera:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS:</td>
<td>N/A</td>
</tr>
<tr>
<td>Access Control:</td>
<td>N/A</td>
</tr>
<tr>
<td>Duress System:</td>
<td>N/A</td>
</tr>
<tr>
<td>Security Special Requirements:</td>
<td></td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

### SCHEMATIC PLAN

**Janitor Room**  
CRG-04-03

[Diagram of Janitor Room]

**NOT TO SCALE**  
For Reference Purposes Only

---

**CFDS – 2019 – ROOM DATA SHEETS**  
CRG-04-03

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Utility Yard

Utility Yard is an exterior, fenced yard to contain mechanical, electrical and utility-related equipment. Area will vary based on equipment requirements.

<table>
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<tr>
<th>ROOM SIZE:</th>
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<tr>
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**DIV 08 - DOORS AND WINDOWS**  Chapter 14

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<thead>
<tr>
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<tr>
<td>R Padlock - FF- P-2827A</td>
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<table>
<thead>
<tr>
<th>Door Hardware Cylinder:</th>
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<tbody>
<tr>
<td>A-1: Cylinder, keyed individually under a CBP Master</td>
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<thead>
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**DIV 09 - CONSTRUCTION AND FINISHES**  Chapter 14

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<th>Ceiling Const. / Finish:</th>
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**DIV 10 - FIXED EQUIPMENT**  Chapter 14

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**DIV 21 - FIRE SUPPRESSION**  Chapter 16

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**DIV 22 - PLUMBING**  Chapter 17

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**DIV 23 - MECHANICAL**  Chapter 18

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**DIV 26 - ELECTRICAL**  Chapter 19

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**DIV 26 - LIGHTING**  Chapter 19

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<th>Fixture Types Optional/Special:</th>
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</table>
DIV 10 - FURNISHINGS AND EQUIPMENT  Chapter 14
Furnishings and Equipment 1:
Furnishings and Equipment 2:
Furnishings and Equipment 3:

DIV 27 - COMMUNICATIONS  Chapter 20
Phone Outlets:
Data Outlets:
Communications Special

DIV 28 - SECURITY  Chapter 21
CCTV Camera: Fixed CCTV wide-angle lens camera, monitored at CCC.
IDS: N/A
Access Control: N/A
Duress System: N/A
Security Special Requirements:

OTHER REQUIREMENTS

SCHEMATIC PLAN  Utility Yard  CRG-04-04

NOT TO SCALE
For Reference Purposes Only

Utility Yard
CRG-04-04

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ACRONYMS AND GLOSSARY

Cargo Facilities Design Standard 2019 (Draft)

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### APPENDIX A. ACRONYMS, ABBREVIATIONS, AND GLOSSARY

#### A.1 ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AABC</td>
<td>Associated Air Balance Council</td>
</tr>
<tr>
<td>AAMA</td>
<td>American Architectural Manufacturer’s Association</td>
</tr>
<tr>
<td>AASHTO</td>
<td>American Association of State Highway and Transportation Officials</td>
</tr>
<tr>
<td>AAWA</td>
<td>American Water Works Association</td>
</tr>
<tr>
<td>ABAAS</td>
<td>Architectural Barriers Act Accessibility Standard</td>
</tr>
<tr>
<td>ABA</td>
<td>Architectural Barriers Act</td>
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<td>ACI</td>
<td>American Concrete Institute</td>
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<td>ACS</td>
<td>Access Control System</td>
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<td>Americans with Disabilities Act</td>
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<tr>
<td>A/E</td>
<td>Architect/Engineer</td>
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<td>AED</td>
<td>Automated External Defibrillators</td>
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<td>AEE</td>
<td>Association of Energy Engineers</td>
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<td>AFF</td>
<td>Above Finished Floor</td>
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<tr>
<td>AHJ</td>
<td>Authority Having Jurisdiction</td>
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<td>AHU</td>
<td>Air Handling Unit</td>
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<td>AISC</td>
<td>American Institute of Steel Construction</td>
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<td>AISI</td>
<td>American Iron and Steel Institute</td>
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<td>Fiber Optic Association</td>
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**WARNING:** This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. § 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with DHS policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid “need-to-know” without prior approval of an authorized DHS official.
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<tr>
<td>4</td>
<td>MIN</td>
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</tr>
<tr>
<td>5</td>
<td>MNPT</td>
<td>Male National Pipe Thread</td>
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<tr>
<td>6</td>
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<tr>
<td>13</td>
<td>psi</td>
<td>Pounds per square inch</td>
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<td>14</td>
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<td>RQMTS</td>
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<td>TEMP</td>
<td>Tempered</td>
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</tbody>
</table>
A.3 GLOSSARY

The following are terms used within this Standard as well as in the design and operation of cargo facilities:

**THK**  Thick/Thickness

**VCT**  Vinyl Composition Tile

**W**  With

**WD**  Width

**WIN**  Window

**Alien** — an individual who is not a citizen or national of the United States.

**Architectural Barrier Act Accessibility Standard (ABAAS)** — A federal regulation requiring federal buildings and facilities meet standards for accessibility for disabled. The design issues in this standard include walks, ramps, curb ramps, entrances, elevators, rest rooms, and signage.

**Bill of Lading** — Shipper to carrier contract lists the terms for moving freight between specified points.

**Bonded Warehouse** — CBP-designated building where goods not requiring duty payments are stored.

**Canine Kennels** — Facilities provide boarding, veterinary care, and dog training space at the POE.

**Cargo** — Freight (goods and products) carried by a ship, barge, train, truck, or plane.

**Cargo Facility Operator** — Company representative who operates wharf or jetway cargo handling activities. Their responsibilities include overseeing unloading cargo from plane/ship to the dock, checking the quantity of cargo versus the ship’s manifest (list of goods), and transferring the cargo into the shed. They check documents authorizing a trucker to pick up cargo; and they oversee the loading/unloading of railroad cars, etc.

**Carrier** — Individual, partnership, or corporation that engages in a business to transports goods or passengers.

**CBP Area** — Seaport-designated CBP security area accommodating sea commerce (arriving from or departing to foreign countries), including processing passengers, crew, their baggage, and effects. The CBP security area includes the vessel/craft disembarking area and other restricted areas, per the PD. CBP prohibits unauthorized entries or contact with persons or objects.

**Container** — Box made of aluminum, steel or fiberglass used to transport cargo by ship, rail, truck or barge. Common dimensions are 20′-0″ x 8′-0″ x 8′-0″ (called a TEU or twenty-foot equivalent unit) or 40′-0″ x 8′-0″ x 8′-0″ (called an FEU). Variations are collapsible containers, tank containers (for liquids), and "rag tops" (open-topped containers covered by a tarpaulin for cargo that sticks above the top of a closed box). In the container industry, containers are usually called boxes.

**Customs Broker** — Licensed and regulated private individuals, partnerships, associations, or corporations. They are empowered by CBP to assist importers and exporters in meeting federal requirements governing imports and exports. Brokers submit information and payments to CBP on behalf of their clients and charge them a fee for this service.
**Design-Bid-Build** — Traditional construction project delivery system has separate contracts, including the contracts are the design performed by the A/E and the construction (bid-build) by the general contractor.

**Design-Build** — Abbreviated D-B or D/B, this is a construction industry project delivery system. This method contracts the design and construction services as a single entity. This is known as the design–builder or design–build contractor. In contrast to "design–bid–build", D-B relies on a single point of responsibility contract to reduce the delivery schedule. It overlaps the design phase and construction phase of a project.

**Federal Government** — The U.S. Government and all federal agencies and agents representing these agencies.

**Gantry Crane** — A track-mounted, shoreside crane that loads and unloads breakbulk cargo, containers, and heavy lift cargo.


**Renovation, Major** — Renovation that requires the CFO or transportation line to comply with CBP’s CFDS in the areas affected by the renovation. A major renovation is one that impacts processing areas, office space, and/or CBP operations. Renovation areas that affect CBP operations would require the CFO or transportation line to comply with the current CBP CFDS. A major renovation to one part of the CBP sterile area, though requiring compliance with the current CBP CFDS in the area to which renovations are made, may not necessarily require renovations/compliance with other parts of the CBP sterile area not affected by the major renovation. For example, if the CBP processing booths renovation requires that it comply with the current CBP CFDS, CBP may not require the CFO or transportation line to renovate the CBP operational support office area to comply with the current CBP CFDS.

**Renovation, Minor** — Renovation in the CBP area that does not appreciably affect processing areas, office space, or CBP operations. For example, modifications of the sterile corridor system or gate areas may fit the definition of a minor renovation. This modification would not require compliance with the CBP’s present CFDS, except for the affected area, unless the passenger capacity is increased.

**Stevedore** — Labor management companies that provide equipment and hire workers to transfer cargo between ships and docks. Stevedore companies may also serve as terminal operators.
APPENDIX B. SIGNAGE

B.1 INTRODUCTION

U.S. Customs and Border Protection (CBP), Enterprise Services (ES), Office of Facilities and Asset Management (OFAM), Facilities Management and Engineering (FM&E), Design and Engineering Analysis (DA&E) division developed a separate policy document, the Signage Design Standard. It establishes minimum requirements, standardizes procedures, and establishes responsibilities for design, fabrication, installation, and procurement for signage classifications/Functions. It ensures an accurate and consistent description of government and private sector personnel responsibilities. Stakeholders refer to the Signage Design Standard for installed or replaced signage at ports of entry (POEs) and cargo facilities.
APPENDIX C - SUBMITTAL REQUIREMENTS

C.1 INTRODUCTION

Project design features require appropriate review and approval by U.S. Customs and Border Protection (CBP) and other relevant stakeholders. The submission requirements listed here apply to projects where design services are performed by architects and engineers (A/Es) for new construction or renovation projects.

These requirements are the minimum standards. The A/E’s scope of work takes precedence on each project. In each phase of work, project documents are submitted to CBP in electronic and hard copy format, through the port director (PD) until the Field Operations Facilities, Program Management Office Project Manager (FOF PMO PM) is assigned.

Due to the complexity and difference in project requirements, the submittals provided for each project in this section are not equally applicable to each project’s discipline or stakeholder. Appendix C requirements were developed for cargo facility projects. This section should be viewed as a general guideline for the A/E to ensure consistency in the design approach. It should create a well-documented and integrated project development process to facilitate CBP design submittal reviews.

The U.S. Government assumes full ownership/occupancy. Cargo facilities are free space, developed by the cargo port operator (CPO). Cargo facility project requirements are based on this appendix. The following are general notes for this process.

1. Drawings, specifications, turnover documents, design narratives, and quality review sections, noted below, are applicable to cargo facility projects.
2. Cost estimates/budgets are limited to the equipment, utilities, and facilities and space for CBP operations. Energy analysis requirements vary, per the project scope.
3. For new or renovation construction submittals, refer to this Standard, C.7(1) New Construction Submittals. Submittals may be truncated in scope, with two design phases condensed into one.
4. Drawings are limited to the requirements of the statement of work (SOW), and include the following:
   • An overall site plan, showing the relationship of CBP and non-CBP spaces, including CBP employee parking
   • Plans, sections, elevations, and details of the CBP spaces
5. Narratives should discuss the relationship of building systems, serving the CBP spaces, to the whole building. For example, some spaces will require dedicated heating, ventilation, and air conditioning (HVAC) systems; the fire protection system typically serves the whole building.
6. Value engineering (VE) reports may not be required.
7. Construction phase submittals include all items noted (as applicable) to the projects.
8. CBP acceptance/occupancy phase submittals include all items noted
C.2 . DRAWINGS

C.2.1 Lettering
Lettering on drawings is legible when drawings are reduced to half-size, and in electronic format. This applies to concept and design development drawings and construction documents. Text/font size is 1/8" height (HGT); nine-point text is the accepted lower limit for lettering on full-size drawings.

C.2.2 Drawing Scale
Drawings are created at full scale (model) and plotted at a selected scale. Drawings include numeric scales. Graphic scales are preferred for site plans. The scale selected is appropriate for high resolution; it offers legibility on reduced copies (i.e., half-sized sets).

Architectural floor plans use English units and contain English scales, so that spatial data management coordinators can reconcile the drawings with the program requirements.

A north arrow is included on all site drawings and plan view drawings.

C.2.3 Drawing Index
Each submittal includes an index of all drawings. This index includes revision versions of the drawings, if changes were made. If the drawing set includes more than one volume, each volume has a drawing index of the entire set.

C.2.4 Seals
Each sheet of the construction document set bears the responsible design professional's seal and signature. Electronically produced documents may have digital signatures and seals.

C.2.5 Cover Sheet
The A/E's of each discipline of record provide a code certification statement for compliance with specified codes and standards; the professional's seal and signature are on the cover sheet. The date of the submittal and percentage of completion is included. For extensive projects, a separate code analysis documentation sheet may be provided.

C.2.6 Document Security Requirements
All “For Official Use Only” (FOUO) documentation, including drawings, specifications, construction documents, and planning materials, are handled, per the CBP Office of Professional Responsibility (OPR) Security Policy and Procedures Handbook, HB 1400-02B (SPPH), August 13, 2009 or current edition and amendment(s).

Within the electronic or printed document, pages containing FOUO building information have the following mark imprinted or affixed:

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. § 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with DHS policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid “need-to-know” without prior approval of an authorized DHS official.
information and is not to be released to the public or other personnel who do not have a valid “need-to-know”
without prior approval of an authorized DHS official.

This mark may not be removed or covered in any way. The FOUO markings are used, regardless of the medium
through which the information appears or is conveyed.

The construction drawings, plans, and specifications are disseminated only to parties with a valid need-to-know,
per CBP OPR document handling requirements.

C.3 SPECIFICATIONS

C.3.1 Format

Specifications are produced, according to the Construction Specification Institute (CSI) MasterFormat divisions,
and include the following:

- Numbers on each page.
- Binding and a table of contents.
- Instructions to bidders.

C.3.2 Editing of Specifications

The A/E edits the specification sections, including government-furnished guide sections, to reflect the project
design intent, CBP requirements, and federal law. Technical specifications are coordinated with the drawings.
Specification language, not applicable to the project, is deleted.

C.4 TURNOVER DOCUMENTS

Electronic and hard copy documentation on building systems is provided. This provides guidance to the building
engineering staff; it assists long-term asset management. The documents show installed elements, their testing
performance, and system operation in the completed facility, including but not limited to:

- Contractor “redline” (corrected marked-up drawings) as-built drawings and specifications, per the
  construction contract, including:
  - Building/site actual measurements.
  - Changes to details.
  - As-built panel schedules, etc.

- The A/E’s final “record” drawings, including the final changes to the design, and contractor noted as-
  built conditions.

- Operating and maintenance manuals for each installed system, including major component
  information, schematic diagrams, sequence of operations, and system operating criteria. The
  minimum standard for custom-written operating manuals should be an MS Word document.

- Training materials and videos.
Asset data and documentation, including engineering calculations, record drawing information, and visual media. This is provided to document the configuration, engineering assumptions, actual material/sizes installed. This ensures future maintenance, repairs, and improvements are addressed.

Prior to acceptance for substantial completion, or beneficial occupancy, the FOF PMO PM verifies required submittals and deliverables as “received and complete,” including:

- Designs, as-built drawings, and record drawings.
- Fabrication submittals and shop drawings, including but not limited to:
  - Equipment schedules.
  - Equipment (or other) data sheets, product literature: the minimum standard should be PDF submission (allow for regional supplementation).
- Equipment inventories, testing, adjusting, and balancing (TAB) reports.
- Building automation systems (BAS) point and device data identification electronic data tables, including point numbers, device ID numbers, network numbers, English-language descriptions, location information, etc.
- Test records demonstrating successful systems and equipment test results.
- Calculations including energy, structural, lighting, fire alarm system voltage drops, battery requirements, fire sprinkler hydraulics, and security.
- Commissioning functional performance test (FPT) results, in an electronic data table format (Excel or Access files). This includes information mentioned in the specifications fields.

Electronic media is in latest desktop media versions and optimum file sizes, including Acrobat “pdf” format, Microsoft, CAD “dwg” format, video media, electronic photo “.jpg” format, and Webcam archive data. Electronic data is provided to the FOF PMO PM on a CD-ROM, unless otherwise specified. Contractors provide backup CDs for the installed equipment software, including files to reinstall user and programming data and the manuals and files produced for the specific installation.

At project completion, the A/E Specification Section 01781, Project Record Documents, are edited to reflect electronic final submittals and data, as noted above.

C.5 DESIGN NARRATIVES AND CALCULATIONS

C.5.1 Format

Typed, bound narratives are produced for each design discipline.

C.5.2 Content

Narratives explain the design intent and document decisions made during the design process; they are an important permanent record of the building design. Drawings and specifications are a record of which systems, materials, and components the building contains; narratives should record why they were chosen. The narrative of each submittal may be based on the previous submittal, but it is revised and expanded at each stage to reflect the current design state.
C.5.3 Calculations

Manual and/or computer-based calculations accompany narratives, per technical analysis support. Each set of calculations should start with a summary sheet: this shows assumptions, references applicable codes and standards, and lists the conclusions. Calculations should include engineering sketches to ensure a better reviewer understanding. The calculations for each submittal should be cumulative, so that the final submittal contains the project calculations. Calculations submitted, at the early stages of the project, are revised later to reflect the final design. Engineering calculations (i.e., number and sizes of re-bars used in reinforced concrete members) refer to codes, standards, the referenced paragraph of a code and/or text book and refer to the drawing number.

C.6 Design Quality Reviews

At the end of each design phase, the A/E submits the completed design documents to the FOF PMO PM for review, comments, and approvals by the Design Analysis and Engineering (DA&E) section. These submittals include, but are not limited to a design review checklist, drawings, specifications, and design narratives. These submittals may be delivered electronically, per the FOF PMO PM agreement (on a case-by-case basis). The DA&E and other stakeholders will review submittals for:

- Conformance with criteria.
- Building and systems performance.
- Efficient and effective design.
- Identified risk factors for successful execution.
- Applications of best practices.
- Cost drivers.
- Customer satisfaction.
- Indicators of overall project suitability and readiness to move to the next phase in execution.

The FOF PMO verifies that the submittals comply with this Cargo Facility Design Standard (CFDS), referred to as this Standard. Upon conclusion of the design review process, all review comments are compiled and verified by the FOF PMO PM. The comments/responses to the comments clearly explain design deficiencies and the required modifications, incorporated into future submittals. With each design phase, the A/E submits responses to the design review comment log, indicating how the comment was addressed.

C.7 Construction Project Submittals

Submittal requirements differ for new construction and renovation projects. For definitions of these project types, refer to this Standard, Chapter 2, Cargo Facilities Planning and Programming.
### Table C.-1. Project Submittals

#### 1. Pre-Design and Programming Phase

<table>
<thead>
<tr>
<th>OVERVIEW</th>
<th>ANTICIPATED SUBMITTALS</th>
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<tbody>
<tr>
<td>This phase establishes project criteria and defines possible appropriate solutions. The limitations are discussed, and the program schedule is validated. This phase may include additional document development to support the next phase, which is schematic design.</td>
<td>• Project requirements understanding acknowledgement (PRUA). • Blocking/stacking diagrams. • Facility long-term master plan. • Waiver/deviation approvals. • Preliminary concept narrative. • Preliminary concept drawings. • The NEPA documentation. • Site survey.</td>
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#### 2. Schematic Design Phase (15% Design)

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<th>OVERVIEW</th>
<th>ANTICIPATED SUBMITTALS</th>
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<tbody>
<tr>
<td>The schematic design phase defines the program solutions. It contains sufficient details to demonstrate the validity of the program solution. The schematic design narrative addresses each project discipline’s design criteria and background. It should include a description of the design development and how the approach meets the overall project objective. Design assumptions and possible issues should be addressed.</td>
<td>• Schematic design narratives. • Renderings/photos. • Calculations/code analysis. • Waiver/deviation approvals. • Schematic drawings include (at the minimum): • Site layout. • Existing conditions (if applicable). • Floor plans. • Mechanical, electrical, utility, and special systems. • Other discipline drawings relevant to the project. • Cost estimates. • Specifications title list, with applicable CSI format sections, per current CSI. • Design review forms. • Value engineering report.</td>
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</table>
3. Bidding and Negotiation Phase (Design-Build)

4. Design Development Phase (30% Design)

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<th>OVERVIEW</th>
<th>ANTICIPATED SUBMITTALS</th>
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| Once CBP analyzes the schematic design and the review comments are validated for inclusion in the design, the 30% design development commences. The objective of the 30% design development is to identify all project elements, products, and details. These become a basis of the design, moving forward with the construction documents, in future design submittals. | - Design development narratives.  
- Calculations/code analysis.  
- Waiver/deviation approvals.  
- Design development drawings.  
- Cost estimates.  
- Design review forms.  
- Value engineering report.  
- Drawing package, as applicable for each discipline, includes:  
  - Cover sheet.  
  - Drawing index.  
  - General notes and symbol legend.  
  - Demolition plans.  
  - Site plan.  
  - Floor plans.  
  - Elevations.  
  - Reflected ceiling plans.  
  - Section details.  
  - Finish schedule.  
  - Detailed space layouts.  
  - Equipment details.  
  - Equipment schedules.  
  - Riser and interconnect diagrams.  
  - Outline specifications |

A. The design narrative indicates how the schematic design review comments, received from CBP, were addressed and how the design was advanced, since the previous submission. A description of the products selected, as a basis of design, and an explanation of how this selection meets the overall design criteria are needed. Deviations from the design objective and design issues are disclosed.

B. The drawings for this submission are presented in the format that is used in future construction documents development.

C. Outline Specifications are in the current CSI MasterSpec format, including products selected for the project, general coordination, and execution requirements for each discipline.

5. Construction Documents Phase (60% through Final Design)

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<th>OVERVIEW</th>
<th>ANTICIPATED SUBMITTALS</th>
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| When the 30% design review comments are received, the designer proceeds with the construction documents development. This phase normally requires design submittals at 60%, 90%, 100%, and/or final stages. For smaller scale renovation projects, CBP may elect to combine the 30% and 60% submittals into a single 50% submittal. | - Updated building system narratives.  
- Updated calculations/code analysis.  
- Construction documents progress drawings.  
- Specifications.  
- Final drawings.  
- Design review forms.  
- Cost estimates. |
### OVERVIEW

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<tr>
<th>ANTICIPATED SUBMITTALS</th>
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<tbody>
<tr>
<td>A. Each one of the subsequent construction document phase submittals addresses the review comments received from the FOF PMO PM in response to the previous submittal.</td>
</tr>
<tr>
<td>B. Drawings should include further refinement for details introduced at the 30% submission stage, including coordinated cross-references with relevant disciplines.</td>
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<tr>
<td>C. Upon completion of this phase, the construction contract documents are finalized, with all outstanding issues resolved.</td>
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<td>D. The complete specifications are coordinated with the drawing package and applicable disciplines.</td>
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<td>A/E</td>
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<td>FOF PMO PM</td>
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### Bidding and Negotiation – (Design – Bid – Build)

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<th>ANTICIPATED SUBMITTALS</th>
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<tr>
<td>● Proceeds with the bidding and award for construction of the project, upon approval from the FOF PMO PM.</td>
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<tr>
<td>● Develops statement of work and solicitation documents, including the completed drawings, specifications, and instructions for bidders and the bid form.</td>
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<tr>
<td>● Begins the construction phase and coordinates with CBP for site visits / reviews and approvals. Deviation from CBP-approved construction documents are reported to the FOF PMO PM for approval.</td>
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<th>OVERVIEW</th>
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<td>Provides the OFAM program level oversight, coordination, and reporting functions.</td>
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<th>ANTICIPATED SUBMITTALS</th>
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<tr>
<td>During the bidding period, questions may arise. The A/E answers requests for information (RFIs) related to non-CBP requirements.</td>
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<th>OVERVIEW</th>
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<tr>
<td>During the bidding period, questions may arise. The FOF PMO PM answers the RFIs related to CBP requirements.</td>
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### 7. Construction Phase

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<th><strong>OVERVIEW</strong></th>
<th><strong>ANTICIPATED SUBMITTALS</strong></th>
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</thead>
</table>
| Contractors should refer to Chapter 2, 2.5, Project Development, Review, and Approval Phases. The A/E’s responsibilities (in coordination with CBP) will include the product and shop drawing submittal reviews, the RFIs, on-site visits, observation of construction, and meeting attendance, sign-off, systems start-up, and change order reviews. The A/E may be involved in developing supplemental drawings and specifications to address design changes. | • Notifies CBP stakeholders of the following items related to the AO’s construction contract award:  
  - Bidding / negotiating update.  
  - Contract award update.  
  - Construction phase kick-off meeting.  
  - Construction schedule / milestones.  
  - Site visit(s)/inspection(s). |

### 8. Acceptance

<table>
<thead>
<tr>
<th><strong>OVERVIEW</strong></th>
<th><strong>ANTICIPATED SUBMITTALS</strong></th>
</tr>
</thead>
</table>
| Coordination of substantial completion by the general contractor. | • Bid/award reports.¹  
  • Baseline project schedule.  
  • Baseline project budget.  
  • Updated schedule / budget.  
  • Milestone schedule.  
  • Change requests/log.¹  
  • Manufacturer submittals/shop drawings.  
  • Punch list.  
  • Cost estimates. |

### 9. Beneficial Occupancy and Project Close-Out

<table>
<thead>
<tr>
<th><strong>OVERVIEW</strong></th>
<th><strong>ANTICIPATED SUBMITTALS</strong></th>
</tr>
</thead>
</table>
| CBP may require post-occupancy evaluation and review. The evaluation is focused on facility performance and design criteria validation. Most of this is accomplished by facility occupants, such as | • Applicable test reports.  
  • Authority having jurisdiction (AHJ) certifications/certificate of occupancy.  
  • The LEED certification².  
  • The corrected FOF PMO PM punch-list items. |

¹ Deviation from CBP-approved documentation must be reported to the FOF PMO PM  
² If applicable
CBP personnel and maintenance contractors. CBP may require the A/E to participate in these activities, as the findings of this evaluation may result in facility modifications.

- Commissioning plans.
- Post-occupancy report/survey plan.

C.7.1 Application

Definitions in this section only apply to new construction projects.

When alternate delivery methods, the LEED certification strategy or project ownership parameters apply, the required submittals may be different from the items defined below. The A/E and general contractor engages with the FOF PMO PM and service provider, at the earliest possible phase, to confirm the submittal requirements.

C.8 PRE-DESIGN AND PROGRAMMING PHASE

C.8.1 Blocking/Stacking Diagrams

This submittal includes developed space program adjacencies and functional spaces. It demonstrates compliance with CBP-approved requirements, the proposed project submission shows feasibility, from a zoning perspective, and shows that the building(s) and access fit the site’s context. The building systems and envelope are defined to evaluate the effectiveness and efficiency related to throughput, operation, safety, security, maintenance, and energy consumption.

During conceptual design, concepts are presented to CBP; these preliminary concepts are for working level use. They are not presentation documents. The number of concepts required are defined in the SOW or otherwise determined by the A/E. They are developed to a level that allows selection of a concept, satisfying program operation and budget goals. The A/E will refine and present the final concept.

C.8.2 Facility Long Term Master Plan

The long-term master plan parameters follow the requirements in this Standard, Chapter 2, Cargo Facilities Planning and Programming. In coordination with the agency stakeholders, involved in the regional planning for a new cruise terminal, a formal master plan is developed and submitted for approval, for each project. When an existing master plan is active for a new construction project, an updated master plan is developed and submitted for approval.

C.8.3 Waiver/Deviation Approvals

During the planning/programming phase, facility requirement deviations are documented and provided, with the approved program of requirements (POR).

Deviations or waiver requests during the schematic design and design development phases, follow the change request process defined in this Standard, Chapter 2, Cargo Facilities Planning and Programming. Deviations are submitted, with appropriate justification, through the FOF PMO PM.
C.8.4 Pre-design and Programming Phase (Conceptual) Narrative

The preliminary concept narrative includes:

Description of each architectural design scheme:

- Organizational concept.
- Expansion potential.
- Advantages and disadvantages.
- Building efficiency.
- Energy considerations.
- Mechanical system and strategy, complying with this Standard, Chapter 18, Mechanical.
- Fire protection design considerations.
- Security features and considerations.

A. Lighting

- Evaluate possible issues with port light emissions.

B. Site Statement

- Include a site statement describing existing site features and erosion conditions, climatic conditions, topography and drainage patterns, wetlands, locations of flood plains, surrounding buildings (style, scale), and circulation patterns around the site.

C. Zoning and Code Restrictions

- Local code restrictions.
- Federal Highway Administration and Department of Transportation requirements.
- Brief statement from each design team discipline member regarding the applicable code requirements related to site and occupancy use, including but not limited to, items such as the construction and occupancy group(s) classification, fire resistance requirements, and general egress requirements, by the fire protection engineer (FPE).

D. Historical Preservation

- Historic preservation considerations (if applicable).
- Potential archeological artifacts.
### PRELIMINARY CONCEPT DRAWINGS – ANTICIPATED SUBMITTALS

#### SITE LOCATION PLAN

Site location plan (at least 1.25 miles (two kilometers) around site), showing:
- Site relative to location of international border, major landmarks, urban development, major roads, irregular topography, and bodies of water.
- Location of bus stations and other mass transit links.
- Location of distinct land use types and districts in the vicinity of the site (e.g., historic districts, retail nodes, civic districts, etc.).

#### EXISTING SITE PLAN

Existing site plan (at least 500’-0” around site), describing:
- Site boundaries, approximate topography, existing buildings, setbacks, and easements.
- Indicate local zoning restrictions.
- Climatic conditions, including path of the sun.
- Description of flood plain issues.
- Location of on-site and off-site utilities.
- Natural landscape.
- Pedestrian and vehicular circulation (include direction of traffic on adjoining streets).
- Neighboring land uses, existing and planned.
- International border and buffer zone.
- Noise disruptions and visual obstacles from port boundary.

#### SITE PLANS FOR EACH DESIGN SCHEME

- Building location and massing.
- Building expansion potential.
- Inspection, parking, and service areas.

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## PRELIMINARY CONCEPT DRAWINGS – ANTICIPATED SUBMITTALS

- Description of local plans for the surrounding area, relation of each concept to those plans, and a summary of the local official’s recommendations.
- Site access by cargo handlers, cargo vehicles, pedestrians, emergency and service vehicles, staff, and others.

### FLOOR PLANS

Floor plans, showing at a minimum:
- Entrances, lobbies, corridors, stairways, elevators, dock spaces, processing spaces, work areas, special spaces, and service spaces (with the principal spaces labeled).
- Dimensions for critical clearances, such as vehicle access.

### BUILDING SECTIONS

Building sections (as necessary), showing:
- Floor-to-floor heights and other critical dimensions.
- Labeling of important spaces.
- Labeling of floor and roof elevations.

### PHOTOGRAPHS

Minimum of six 8” x 10” photographs showing the site and elevations of existing buildings (or landscape, as applicable) surrounding the site.

### MASSING MODELS

Massing models of each architectural design scheme on a common base. No fenestration should be provided at this design development phase.

---

**C.8.6 Cost Estimates**

- Preliminary concept cost estimates verify that each design scheme can be constructed within the project budget.
- Space program statement/reconciliation — provide in metric and imperial units.

**C.8.7 National Environmental Policy Act Documentation**

National Environmental Policy Act (NEPA) documentation conforms to the authorities and regulations referenced in this Standard, Chapter 1, Introduction. Complete NEPA documentation is submitted, prior to design development.

**C.8.8 Site Survey**

Site surveys are generally prepared for projects involving sitework. The survey may be contracted separately, by CBP or the service provider, or it may be included in the A/E project scope. The guidelines given here apply in either case. When CBP contracts for the survey directly, the A/E may be requested to review the survey’s SOW. The A/E may recommend technical requirements modifications to suit the project site.
Surveys are prepared and sealed by a surveyor, licensed in the state where the project is located. The criteria listed here is not absolute; it should be modified by the civil engineer (CE) to suit the project conditions.

Surveys contain:

A. Existing Features

- Show locations of permanent features, within limits of work, such as: buildings, structures, fences, walls, concrete slabs and foundations, above-ground tanks, cooling towers, transformers, sidewalks, steps, power and light poles, traffic control devices, manholes, fire hydrants, valves, culverts, headwalls, catch basins or inlets, property corner markers, benchmarks, etc.

B. International Landmarks

- Show landmark locations associated with the international border.

C. Adjacent Features

- Show the location of adjacent and bounding roads or streets and street curbs, within limits of work, including driveways and entrances.

D. Paving

- Show types of surfacing and limits.
- Show public streets, right of way widths and centerlines.

E. Landscaping

- Show the location of trees, shrubs, and other plants, within limits of work. Show the tree caliper size, and dead trees.

F. Utility Locations

- Show the location of overhead telephone and power lines, within the limits of work, and their easements.
- Based on existing records, show the location of underground utilities, such as gas, water, steam, chilled water, electric power, sanitary, storm and combined sewers, telephone, etc. Show the sizes of pipes inside diameter (I.D.), invert elevations, inlet, or manhole rim elevations. When appropriate, verify information in the field.

G. Storage Tanks or Subsurface Structures

Based on existing records, show the location of underground storage tanks and subsurface structures.

H. Topography

- Topography field criteria should include:
Contour intervals at 1'-0" to 2'-0" (300 mm to 600 mm), plotted on a grid system, in relation to the survey scale.

- Elevations, at top and bottom of ditches, and at abrupt grade changes.
- Top-of-curb and gutter elevations.
- Street centerline elevations.
- Elevations at permanent features, within the limits of work.
- Ground floor elevations, for existing buildings.

I. Bearings and Distances for Property Lines Within the Limits of Work

J. Official Datum, Upon Which Elevations Are Based

K. The Benchmark, on or Adjacent to the Site, to be Used as a Starting Point

L. Official Datum, Upon Which Horizontal Control Points Are Based

- Establish two permanent benchmarks on the site if they do not already exist. Provide adjacent key data point elevations (and across the street from the project site) of the building structures and improvements; provide the elevations that occur during the wet and dry season.

M. Flood Plain, Streams, or Other Water Sources

- Delineate the location of wetlands, floodplains, underground streams, or water sources.

C.8.9 Geotechnical Report

The geotechnical report is available to contractors as a common basis for bids. The report would function as the basis for evaluating “changed conditions” or “differing site conditions,” during construction; therefore, it needs to have sufficient detail, including the number of borings, groundwater, and contamination evaluations. This support the design and mitigates “changed condition” issues.

C.9 SCHEMATIC DESIGN (15% DESIGN)

C.9.1 Schematic Design Narrative – (15% Design)

A design narrative is a required deliverable at each stage of the project. The schematic design narrative includes a preliminary description of the concept solution selected to achieve the design objective, design issues, and assumptions. The schematic design narrative includes field conditions potentially affecting the work. The deliverable demonstrates how the schematic design complies with CBP requirements, the approved POR, and applicable codes and regulations. In the schematic narrative, the A/E demonstrates applicable building code requirements and possible compliance issues and provides code analysis, addressing applicable disciplines. The schematic design narrative typically includes:

A. Overall Site Layout – (15% Design)

- Description of site and landscape schematic design.
- Demolition (if required).
- Site circulation.
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323  • Paving areas.

324  B. Utilities and Storm Water – (15% Design)

325  • Utility distribution and collection systems.

326  • Method for storm water detention or retention.

327  C. Landscape Design – (15% Design)

328  • Landscape design.

329  • Irrigation (if applicable).

330  • Landscape maintenance concept.

331  D. Accessibility – (15% Design)

332  • Provide the accessibility path plans for the physically disabled.

333  E. Expansion – (15% Design)

334  • Show building expansion potential and space efficiency.

335  F. Elevators – (15% Design)

336  • Provide elevators (if applicable).

337  G. Code Analysis Requirements – (15% Design)

338  • Summary of consultation with local officials.

339  • Identification of unusual local code requirements and compliance strategies.

340  • Name of model building code followed.

341  • Building classifications.

342  • Identification of region of seismicity, wind speed, etc.

343  • Construction and occupancy group(s) classifications, structural components ratings, fire resistance requirements, interior finish, occupant load calculations, and exit calculations.

344  H. Structural – (15% Design)

345  • Statement certifying that the structural engineer (SE) has reviewed the building configuration for blast, seismic, and hurricane adequacy. The SE and the architect sign this statement.

346  I. Mechanical, Electrical, and Plumbing – (15% Design)

347  Mechanical, Electrical, and Plumbing (MEP) submittals include:

348  1. Mechanical

349  2.   A written narrative, describing the selected mechanical systems and equipment, including:

350  • Indoor and outdoor design conditions.
2. Electrical

- Utility requirements.
- Description of at least two potential electrical systems, including the lighting, lighting control system, and a code compliance statement.

3. Plumbing

- A description of proposed plumbing systems, including:
  - Domestic cold and hot water, sanitary and storm drainage, and irrigation.
  - Evaluate alternate sources for preheating domestic water (solar or heat recovery).

### C.9.2 Waiver/Deviation Approvals

Refer to chapter C8.3, Waiver/Deviation Approvals, for further description.

### C.9.3 Fire Protection Requirements – (15% Design)

- Site plan indicating fire protection, water supplies, fire hydrants, and fire apparatus access roads.
- Description of the building’s proposed fire protection systems, including the egress system.
- Identification of areas to receive automatic sprinkler systems, and/or automatic detection systems, smoke control systems, etc., to provide a final concept fire protection and life safety analysis.

### C.9.4 Historical Preservation Requirements (if required)

- Historic and sensitive areas.
- Historic preservation concerns, strategies, solutions, and photographic evidence.

### C.9.5 Operations – (15% Design)

- Inspection, staging, and parking areas.
- Operations and maintenance strategies.
- Processing booths.

### C.9.6 Schematic Design Drawings – Schematic Design (15% Design)

The schematic design phase focuses on the macro level design elements. These elements include, but are not limited to, siting, building massing, and environmental and community impacts and concerns.

For major projects, a presentation is made to the CBP Commissioner for the final approval.
Schematic design drawings include, at a minimum:

### Table C9.7(1). Schematic Design Drawings – (15% Design)

<table>
<thead>
<tr>
<th>SCHEMATIC DESIGN DRAWINGS (15% DESIGN) – ANTICIPATED SUBMITTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SITE LOCATION PLAN</strong></td>
</tr>
<tr>
<td>Site plan [at least 500'-0&quot; around site], describing:</td>
</tr>
<tr>
<td>● Site boundaries, approximate topography, existing buildings, setbacks, and easements.</td>
</tr>
<tr>
<td>● Building orientation, with respect to the sun’s path.</td>
</tr>
<tr>
<td>● Building massing and relationship to surrounding buildings massing.</td>
</tr>
<tr>
<td>● Future building expansion potential.</td>
</tr>
<tr>
<td>● On-site and off-site utility locations.</td>
</tr>
<tr>
<td>● Grading and drainage.</td>
</tr>
<tr>
<td>● General landscape design, showing location of major features.</td>
</tr>
<tr>
<td>● Pedestrian and vehicular circulation (include direction of traffic on adjoining streets).</td>
</tr>
<tr>
<td>● Inspection, parking, and service areas.</td>
</tr>
<tr>
<td>● Fire protection, water supplies, fire hydrants, and fire apparatus access road.</td>
</tr>
<tr>
<td>● Certified vehicle turn-radius study.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>ARCHITECTURAL DRAWINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Demolition plans (if required).</td>
</tr>
<tr>
<td>● Floor plans, denoting spaces, and critical dimensions.</td>
</tr>
<tr>
<td>● Access plans, indicating how major mechanical and electrical equipment can be removed/maintained/replaced.</td>
</tr>
<tr>
<td>● Building facades, showing fenestration and materials elevations</td>
</tr>
<tr>
<td>● Major interior spaces elevations</td>
</tr>
<tr>
<td>● Building sections (as necessary), confirming:</td>
</tr>
<tr>
<td>● Adequate space for structural, mechanical and electrical, telecommunications, and fire protection systems.</td>
</tr>
<tr>
<td>● Mechanical penthouses.</td>
</tr>
<tr>
<td>● Floor-to-floor and other critical dimensions.</td>
</tr>
<tr>
<td>● Labeling of important spaces.</td>
</tr>
<tr>
<td>● Labeling of floor and roof elevations.</td>
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</table>

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<thead>
<tr>
<th>STRUCTURAL DRAWINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural framing plans of the proposed structural system showing column locations, bay sizes, and location of expansion and seismic joints</td>
</tr>
</tbody>
</table>

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### SCHEMATIC DESIGN DRAWINGS (15% DESIGN) – ANTICIPATED SUBMITTALS

#### MEP DRAWINGS

**Mechanical Drawings**
- Demolition plans (if required)
- HVAC equipment locations
- Air flow riser diagrams representing supply, return, outside air, and exhaust systems
- Water flow riser diagrams of the main mechanical systems in the mechanical room(s) and throughout the building

**Electrical Drawings**

Provide plans showing electrical system equipment locations, including panels, generators, and building uninterruptible power supply (UPS).

**Plumbing Drawings**
- Proposed building zoning and major piping runs.
- Locations of proposed plumbing fixtures and equipment.
  - Systems schematics and flow diagrams.

#### FIRE PROTECTION DRAWINGS

- Plans showing fire protection system equipment.
  - Fire protection water supplies, fire hydrant locations, fire apparatus access roads, and fire lanes.

#### HISTORIC PRESERVATION DRAWINGS

- Reduced plans, showing preservation concepts.
  - Elevations and site plans, as needed.

#### COLOR RENDERING

Color rendering are 24” x 36” (600 mm x 900 mm) (minimum size).

#### DETAILED MODEL

Detailed model of the approved concept to convey the architectural intent of the design.
C.9.7 Calculations/Code Analysis – Schematic Design (15% Design)

Calculations confirm acoustical, lighting, indoor environment, air quality, and other design targets. Calculations use approved, and when applicable, code-required methods.

Schematic design calculations include:

- Acoustical calculations, including noise transmission through:
  - Building envelope.
  - Interior surfaces.
- Mechanical and electrical equipment.
  - Heat transfer.
- Dew point.
- Plumbing fixtures.
- Lighting levels and glare analysis.
- Elevator capacity analysis, when required.
- Inspection space capacity and maneuverability analysis.
- Throughput analysis (and projected wait times).
- Occupancy and code calculations.

C.9.8 Specifications – Schematic Design (15% Design)

A specification table of contents is provided by the A/E, including anticipated final design sections, for the schematic design submittal.

C.10 DESIGN DEVELOPMENT PHASE (30% DESIGN)

C.10.1 Value Engineering Reports – Design Development Phase (30% Design)

CBP requires an independent value engineering (VE) consultant to facilitate a value engineering study. Findings and recommendations are presented to CBP for approval, before implementation.

In the design development phase, CBP requires a similar study, based on updated information. At this phase, the VE report focuses on:

- Materials and finishes.
- Engineering and security systems.
- Architectural details.
- Building layout.
- Phasing and scheduling plans.
- Constructability issues.
- Civil elements.

The design development phase VE report occurs after the submission of design development drawings. The final design development submission is prepared, upon agreement of implemented VE proposals.
C.10.2 Design Development Narrative – (30% Design)

The design development narrative includes a statement confirming that the design complies with CBP requirements, the approved POR, the engineering system design targets, adopted VE changes, and applicable codes and regulations. The design development narrative includes:

- Site Plan:
  - Site circulation concept, explaining site entrances, parking spaces, restricted access areas, traffic calming design, inspection capacities, service vehicle access, and fire lanes.
  - Site utilities distribution concept, including fire protection water supply, hydrants, and drainage.
  - Landscape design concept, explaining paving, site furnishings, vegetation, water features, irrigation, water conservation plan, maintenance plan, and impacts to CBP officer sight lines and security.
  - Site construction description, including hardscape and utility conduits.
  - Code analysis for each discipline, to include building and local zoning codes.

C.10.3 Building concept – (30% Design)

A. Geotechnical Report – (30% Design).

Provide a geotechnical engineering report, including boring logs (if part of scope of work).

B. Architectural, Interior, and Site Design – (30% Design)

C. Building Design and Orientation, Adjacencies, Entrance Locations, and Service Locations

- Building circulation and arrangement of major spaces.
- Finishes selection, furnishings, and internal layout.
- Two finish boards for public and tenant interior areas and two finish boards of exterior finishes, composed of actual material samples and color-coded plans, sections, and elevations of major space showing their use.
- Exterior wall system.
- Roofing system(s).
- Exterior glazing system.
- Interior finishes.

D. Structural – (30% Design)

- Comparative cost analysis of at least three potential structural framing systems.
- Description of recommended structural concept, including:
  - Choice of framing system, including lateral load-resisting elements, and proposed foundation design.
  - Required fire-resistance rating of structural elements.
  - Summary of special requirements, resulting from applicable local codes.
  - Proposed corrosion protection methods (if applicable).
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SUBMITTAL REQUIREMENTS

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458  ● Building construction description.
459  ● Structural bay size.

E. Building Maintenance Plan – (30% Design)

460  ● Cleaning of glazing and special spaces (i.e., canine, detention, and public areas).
461  ● Maintenance of lighting and wall/floor/ceiling surfaces.
462  ● Consideration and prevention of bird nesting, on exterior surfaces.
463  ● Servicing or replacement of major mechanical and electrical equipment.
464  ● Listing required dimension clearances, if necessary.
465  ● Security design, complying with OPR requirements.

F. Building Keying – (30% Design)

467  The report defines the keying hierarchy for the building, incorporating various levels of access, security, and fire egress. For keying, the A/E should coordinate with the GSA FPE.

G. Signage – (30% Design)

470  Provide a signage report, as required in the CBP Signage Design Standard.

H. Historic Preservation Report – (30% Design)

473  ● Building name, address, project title, project control number, author (preservation architect), preservation architect’s signature, and date of submission.
475  ● Project purpose, scope, groups and individuals involved, and substantive changes to approach, described in the concept submission.
477  ● Existing conditions, describing overall building size, configuration, character, project location, materials, alterations, and findings from testing or analysis.
479  ● Preservation solutions explored, how and why they were resolved, and preservation / protection of historic materials, during construction, through tenant move-in.
481  ● Impacts to the building’s significant architecturally qualities; also, measures proposed to mitigate adverse effects on historic materials or design.
483  ● Photographs of general and detail views, showing existing conditions at affected preservation zones. They are keyed to the plan, showing the location and orientation of each photo view, with captions identifying location, subject, and condition.

I. Sustainable Design – (30% Design)

486  ● Sustainable design concepts.
488  ● Energy conservation design elements.
489  ● Water conservation considerations.
490  ● Analysis of refuse removal, recycled materials removal, and maintenance requirements.
J. Building Code and Life Safety – (30% Design)

- Building egress description including egress calculations, stairway exit capacities, remoteness, exit discharge, etc.
- Review of building for compliance with life safety and building security requirements.
- Interior finish requirements as they pertain to life safety.

K. Final Mechanical System and Equipment – (30% Design)

- Updated indoor and outdoor design conditions for spaces under occupied and unoccupied and 24-hour conditions.
- Dew point analysis.
- Updated ventilation rates, dehumidification, and pressurization criteria for spaces under occupied, 24-hour, and unoccupied conditions.
- Updated equipment capacities, weights, sizes, and power requirements.
- Complete description of the air side and water side systems, and the associated components, including operating characteristics, ranges, capacities, spaces served, and special features.
- Descriptions of control strategy and sequence of operations for spaces under categories under occupied and unoccupied, and 24-hour conditions.
- Updated fuel and utility requirements.

L. Electrical – (30% Design)

- Description of alternative power distribution schemes, comparing the advantages and disadvantages of each approach. Include the source of power, potential for on-site generation, most economical voltage, and primary vs. secondary metering.
- Proposed power distribution scheme, including a detailed description and justification of the selected scheme.
- Address special power and reliability requirements, including emergency power and UPS systems.
- Proposed lighting systems:
  - Typical lighting system features, including fixture type, layout, and type of controls.
  - Discuss special spaces, such as lobbies, work areas, inspection/processing areas, detention areas, and support spaces.
  - Discuss exterior lighting scheme, including monitored and inspection areas.
  - Describe the energy usage of the lighting system.
- Methods proposed for energy conservation and integration with BAS

M. Updated Description of Plumbing System – (30% Design)

Provide domestic cold and hot water, sanitary and storm drainage, and irrigation systems.

N. Telecommunications – (30% Design)

Show the proposed telecommunications infrastructure, including systems and cabling. These are designed to comply with CBP National Cabling Standards.
O. Fire Resistance and Protection – (30% Design)

- Building fire alarm and suppression systems, and interface with BAS and security systems
- Smoke control system(s) (when applicable).
- Special fire protection systems (i.e., kitchen extinguishing system, LAN Room system) (when applicable).
- Fire resistance rating of building structural elements.
- Mass notification system.

P. Security Engineering Analysis for Demand Limit Controls – (30% Design)

- Description of each proposed alarm/signal system.
- Description of proposed security systems' features, and intended mode of operation, including:
  - Intrusion detection system (IDS).
  - Card access controls.
  - Closed-circuit television (CCTV).
  - Duress alarm system.

Q. Sustainable Design and Energy Consumption – (30% Design)

Methods proposed for energy conservation and integration with BAS, with engineering analysis for demand limit controls.

C.10.4 Design Development Calculations/Code Analysis (30% Design)

Design Development calculations include:

A. Site Analysis – (30% Design)

- Site storm drainage and sanitary sewer calculations.
- Storm water detention calculations (if applicable).
- Dewatering calculations, during dry and wet season excavation.

B. Building Code and Life Safety – (30% Design)

Provide occupancy and code calculations.

C. Acoustical calculations – (30% Design), including noise transmission through:

- Building envelope.
- Interior surfaces.
- Mechanical and electrical equipment.

D. Mechanical – (30% Design)

- Heat transfer.
- Dew point.
559  ● Updated building heating and cooling load calculations.
560  ● Updated psychrometric calculations for HVAC systems, at full and partial loads.
561  
562  E. Electrical (including lighting) – (30% Design)
563  Provide analysis of lighting levels and glare.
564  
565  F. Plumbing considerations – (30% Design)
566  Provide plumbing fixtures.
567  
568  G. Elevator – (30% Design)
569  Analyze elevator capacity, as required.
570  
571  H. Operations – (30% Design)
572  ● Inspection space capacity and maneuverability analysis.
573  ● Throughput analysis (and projected wait times).
574  
575  I. Energy Consumption – (30% Design)
576  Updated energy consumption calculations.
577  
578  C.10.5 Design Development Drawings (30% Design)
579  Design development finalizes the selection of all systems, with respect to type, size, and other material
580  characteristics. Systems include structural, mechanical, fire protection, and electrical. It includes other building
581  components such as the building envelope, interior construction, operational spaces, elevators, and support
582  spaces.
583  These submissions are not preliminary construction documents. The approval at the project directive meeting
584  may require that building layout or size changes be incorporated into the construction documents. No design
585  discipline should start work on construction documents until the project directive has been approved. For major
586  projects, a presentation is made to the CBP commissioner for the final approval.
587  Design development drawings include, at a minimum:
588  
589  Table C-3. Design Development Drawings (30% Design) – Anticipated Submittals
590  
591  | DESIGN DEVELOPMENT DRAWINGS (30% DESIGN) – ANTICIPATED SUBMITTALS |
592  | CIVIL DRAWINGS |
593  | Site plan (at least 500'-0" around site), describing: |
594  | Grading and drainage plan, showing: |
**DESIGN DEVELOPMENT DRAWINGS (30% DESIGN) – ANTICIPATED SUBMITTALS**

- Storm water detention features.
- Buildings, roads, walks, parking, and other paved areas.
- Routes from parking areas and from public streets to port entrance
- Fire apparatus and fire lanes.

**SIGNAGE PLANS**

Signage plan and schedule for building identification, statutory, notification, wayfinding and room identification signs is per the CBP Signage Standard.

**ARCHITECTURAL DRAWINGS**

**Site plan** (at least 500'-0" around site), describing:
- Demolition plans (if required).
- Site layout plan, showing:
  - Buildings, roads, walks, parking, and other paved areas.
  - Routes from parking areas and from public streets to port entrance.
  - Fire apparatus and fire lanes.
  - Location of accessible pathways and services for the physically disabled.

**Demolition drawings (if required)**

**Building floor plans, showing:**
- Labeling and dimensioning of rooms/spaces.
- Enlarged layouts of special spaces.
- Location of accessible pathways and services for the physically disabled.

**Building reflected ceiling plans, showing:**
- Enlarged layouts of special spaces.
- Delineated spaces with ceiling heights.
- Materials and lighting fixtures labeled and scheduled.

**Building roof plans, showing:**
- Drainage design, including minimum roof slope.
- Dimensions.
- Membrane and insulation of roofing system.
- Mechanical Equipment and penetrations.
### DESIGN DEVELOPMENT DRAWINGS (30% DESIGN) – ANTI-CIPATED SUBMITTALS

**Elevations, showing:**
- Entrances, window arrangements, doors.
- Exterior materials with major vertical and horizontal joints.
- Roof levels.
- Raised flooring and suspended ceiling space.

**Interior elevations, showing:**
- Public, detention and secure spaces.
- Work areas, inspection and processing spaces.
- Location of accessible services for the physically disabled.

**One longitudinal and one transverse section for each building, showing:**
- Floor-to-floor dimensions.
- Stairs and elevators.
- Typical ceiling heights.
- General roof construction.

**Exterior wall sections, showing:**
- Materials and layers.

**Accommodation of mechanical and electrical equipment / conduit**

### SIGNAGE PLANS

Signage plan and schedule for building identification, statutory, notification, wayfinding and room identification signs, per the CBP Signage Standard.

### ARCHITECTURAL DRAWINGS

**Site plan** (at least 500’-0” around site), describing:
- Demolition plans (if required).
- Site layout plan, showing:
  - Buildings, roads, walks, parking, and other paved areas.
  - Routes from parking areas and from public streets to port entrance.
  - Fire apparatus and fire lanes.
  - Location of accessible pathways and services for the physically disabled.
DESIGN DEVELOPMENT DRAWINGS (30% DESIGN) – ANTICIPATED SUBMITTALS

Demolition drawings (if required)

Building floor plans, showing:
- Labeling and dimensioning of rooms/spaces.
- Enlarged layouts of special spaces.
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Building reflected ceiling plans, showing:
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- Typical ceiling heights.
- General roof construction.

Exterior wall sections, showing:
- Materials and layers.

Accommodation of mechanical and electrical equipment/conduit
DESIGN DEVELOPMENT DRAWINGS (30% DESIGN) – ANTICIPATED SUBMITTALS

SIGNAGE PLANS

Signage Plan and Schedule for building identification, statutory, notification, wayfinding and room identification signs, per the CBP Signage Standard.

INTERIORS FURNISHINGS AND FIXTURES

Proposed room finish schedule, showing:
- Floors.
- Bases.
- Walls.
- Ceilings.

Proposed site furniture cut sheets and locations.

STRUCTURAL DRAWINGS

Structural Framing Plans of the proposed structural system showing:
- Column locations.
- Bay sizes.
- Key details.

Location of expansion and seismic joints.

MEP DRAWINGS

Mechanical Drawings

Building floor and roof plans, showing: Locations of mechanical equipment and penetrations.

Electrical Drawings
- Site plan showing:
  - Proposed site distribution for power and communication.
  - Proposed service entrance.
  - Location of transformers, generators, and vaults, etc.

- Floor plans showing:
  - Proposed major electrical distribution scheme and locations of electrical rooms and closets and communication closets.
  - Proposed major routing of major electrical feeder runs, bus duct, communication backbone systems, and security systems.
### DESIGN DEVELOPMENT DRAWINGS (30% DESIGN) – ANTICIPATED SUBMITTALS

- Plan layouts of electrical rooms, showing locations of major equipment, including, size variations by different manufacturers.
- Single line diagram of the building power distribution system.
- Plan of typical office lighting layout, typical non-commercial and commercial inspection areas, and other special spaces.

Lightning protection and building grounding.

#### Plumbing Drawings
- Demolition drawings (if required).
- Floor plan(s) showing:
  - Proposed building zoning and major piping runs.
  - Locations of proposed plumbing fixtures and equipment.

Systems schematics and flow diagrams.

#### COMMUNICATIONS DRAWINGS

**Diagrams showing:**

Single line diagram of other signal system including telephones, security, public address, secure communication, and other systems.

#### SECURITY SYSTEM DRAWINGS

- Security system site plan, indicating:
  - Proposed locations for CCTV.
  - Duress alarm buttons/sensors.
  - The IDS.
  - Access controls.

- Security system floor plans, showing:
  - Proposed locations for access controls.
  - IDS.
  - CCTV.
  - Duress buttons.

Local panels.
DESIGN DEVELOPMENT DRAWINGS (30% DESIGN) – ANTICIPATED SUBMITTALS

HISTORIC PRESERVATION DRAWINGS

- Reduced plans showing preservation concepts.
- Elevations, plans, and section details showing preservation design solutions for each issue identified, per the regional preservation officer’s approval.

COLOR RENDERING

Color rendering is 24” x 36” (600 mm x 900 mm) (minimum size) if the design has changed from the Schematic Design Phase.

C.10.6 Calculations

- Life Safety
  - Occupant load and egress calculations.

- Lighting
  - Lighting calculations for inspection, administrative, detention, support, and outdoor spaces.
  - Life-cycle cost analysis of luminaire/lamp system and associated controls.
  - Power density analysis for lighting of each area.

- Mechanical and Plumbing Energy Consumption
  - Updated water consumption calculations and analysis including make-up water for HVAC systems, domestic water consumption, and water consumption for irrigation.
  - Updated fuel consumption estimates.

- Fire Resistance and Protection
  - Fire protection water supply calculations, including water supply flow testing data.
  - Fire pump calculations (when applicable).
  - Smoke control calculations (when applicable).
  - Stairway pressurization calculations (when applicable).
  - Calculations contained in the SFPE Handbook of Fire Protection Engineering for calculating sound attenuation through doors and walls for placement and location of fire alarm system audible notification appliances.

C.10.7 Specifications

At the design development phase, the A/E assembles all project-related construction guide specifications. Next, they draft engineering specification sections and mark out content that does not apply to the project.
CONSTRUCTION DOCUMENTS PHASE – (60% THROUGH THE FINAL DESIGN)

In the construction documents phase, CBP requires a similar study at the 60% progress submittal. The final set of construction documents incorporate approved recommendations from this study.

Construction Documents Narrative – (60% through the Final Phase)

The construction documents narrative includes a statement confirming that the design fully complies with CBP requirements, the approved POR, the engineering system design targets, adopted VE changes, and applicable codes and regulations. The narrative is signed by the A/E. In addition, the construction documents narrative focus on the building engineering systems, including the following information:

- Code Compliance
  - A final Mechanical code compliance statement
  - Description of the final mechanical system and equipment selection including:
    - Final indoor and outdoor design conditions for all spaces under occupied, 24-hour, and unoccupied conditions.
    - Final ventilation rates, dehumidification, and pressurization criteria for all spaces under occupied, 24-hour, and unoccupied conditions.
    - Final equipment capacities, weights, sizes, and power requirements.
    - Final psychometrics of HVAC systems.
    - A final description of deviation from the HVAC system as approved in the schematic design phase submittal.

- Mechanical/Electrical
  - Final fuel and utility requirements

- Plumbing
  - Description of plumbing system, including domestic cold and hot water, sanitary and storm drainage, and irrigation systems

- Operations
  - A final description of the air side and water side systems and the associated components including operating characteristics, ranges and capacities, spaces served, and special features.
  - Final descriptions of the control strategy and sequence of operations for all spaces under occupied, 24-hour, and unoccupied conditions.
C.11.2 Construction Documents Phase Calculations – (60% through the Final Design)

Construction documents calculations include:

- Site calculations.
  - Final drainage calculations, including storm water detention.
  - Pipe sizing calculations for water and sewer pipes.
  - Pavement design calculations.

- Life safety calculations.
  - Final occupant load and egress calculations

- Structural calculations.
  - Final structural calculations, including:
    - Gravity loads.
    - Lateral loads.
    - Foundations.
  - Supports for nonstructural elements, including mechanical and electrical equipment on the roof and in equipment rooms, louvers, and other penetrations.
  - Steel connections.
  - Blast analysis.
  - Sizing of vibration isolators for mechanical equipment.

- Mechanical calculations.
  - Final heat transfer.
  - Final dew point.
  - Thermal loads where significant.
  - Final system pressure static analysis at peak and minimum block loads for occupied and unoccupied conditions.
  - Building pressurization analysis for peak and minimum block loads for occupied and unoccupied conditions.
  - Final building heating and cooling load calculations.
  - Final selection of mechanical equipment, cut sheets of selected equipment.
  - Final psychrometric calculations for the selected HVAC systems at full and partial loads.
  - Final energy consumption calculations.
  - Final fuel consumption estimates.
  - Sizing of fuel storage and distribution system.

- Electrical calculations.
  - Final lighting levels and glare analysis.
  - Lighting calculations for inspection, administrative, detention, support, and outdoor spaces.
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C.11.3 Construction Documents – (60% through the Final Design)

This phase requires a detailed set of documents coordinated by all disciplines into one coherent document to become the basis for a construction contract. The construction documents should include all levels of detail drawings from site planning to construction details, with specifications, cost estimates, and calculations. The construction documents progress set is reviewed at a minimum at 60, 90, and 100%, and approved by CBP before proceeding.

Construction documents include, at a minimum, items shown in the following table.

- Short circuit and voltage drop calculations.
- Overcurrent coordination.
- Generator calculations including start-up loads.

- Plumbing calculations.
- Final plumbing fixtures.
- Flow and head calculations for pumping systems for peak and minimum block loads for occupied conditions.
- Final roof drainage calculations and hot water heating calculations.
- Water supply calculations, including pressure.
- Sanitary waste sizing calculations.
- Final water consumption calculations and analysis including make-up water for HVAC systems, domestic water consumption, and water consumption for irrigation.

- Fire protection calculations.
- Final fire protection water supply calculations, including water supply flow testing data.
- Final fire pump calculations (when applicable).
- Final smoke control calculations (when applicable).
- Final stairway pressurization calculations (when applicable).
- Final calculations contained in the SFPE Handbook of Fire Protection Engineering for calculating sound attenuation through doors and walls for placement and location of fire alarm system audible notification appliances.

- Acoustical calculations.
- Final acoustical calculations, including noise transmission through:
  - Building envelope
  - Interior surfaces
  - Mechanical and electrical equipment
- Vibration propagation
- Acoustical calculations for peak and minimum block loads for occupied conditions
### Table C – 5. Construction Documents (60% through the Final Design)

<table>
<thead>
<tr>
<th>CONSTRUCTION DOCUMENTS (60% THROUGH THE FINAL DESIGN) – ANTICIPATED SUBMITTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SITE PLANNING DRAWINGS</strong></td>
</tr>
<tr>
<td>Site Planning Drawings (the plans listed below, except the demolition plans, may be combined on small projects)</td>
</tr>
<tr>
<td>- Demolition plans (if required).</td>
</tr>
<tr>
<td>- Site layout plan, including:</td>
</tr>
<tr>
<td>- Location of all buildings, roads, walks, accessible routes from parking and public street to port entrance, parking and other paved areas, and planted areas.</td>
</tr>
<tr>
<td>- Limits of construction.</td>
</tr>
<tr>
<td>- Locations and sizes of fire protection water supply lines, fire hydrants, fire apparatus access roads, and fire lanes.</td>
</tr>
<tr>
<td>- Location of floodplains and wetlands.</td>
</tr>
<tr>
<td>Grading and drainage plan, showing:</td>
</tr>
<tr>
<td>- Existing and new contours · use 2'-0&quot; (600 mm) interval (minimum) in area around buildings.</td>
</tr>
<tr>
<td>- Spot elevations at all entrances and elsewhere as necessary.</td>
</tr>
<tr>
<td>- Elevations for walls, ramps, terraces, docks, plazas, and parking lots.</td>
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<tr>
<td>- All surface drainage structures.</td>
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<tr>
<td>- Water retention and conservation systems.</td>
</tr>
<tr>
<td>- Site utilities plan, showing all utilities, including inlets, manholes, clean-outs, and invert elevations.</td>
</tr>
<tr>
<td>- Survey of surrounding buildings, structures, and improvements in wet and dry season to document preconstruction elevations.</td>
</tr>
<tr>
<td>Potential archeological artifacts.</td>
</tr>
<tr>
<td><strong>LANDSCAPE DRAWINGS</strong></td>
</tr>
<tr>
<td>Planting plan, showing:</td>
</tr>
<tr>
<td>- Building outline, circulation, parking, and major utility runs.</td>
</tr>
<tr>
<td>- Size and location of existing vegetation to be preserved (include protection measures during construction).</td>
</tr>
<tr>
<td>- Location of and identity function of all new plant material (i.e., windbreak or visual screen where appropriate).</td>
</tr>
<tr>
<td>- Erosion control.</td>
</tr>
<tr>
<td>Planting schedule, showing quantity of plants, botanical names, planted size, and final size.</td>
</tr>
<tr>
<td>Irrigation plan, if applicable, including schematic of irrigation control system.</td>
</tr>
<tr>
<td>Planting and construction details, profiles, sections, and notes as necessary to fully describe design intent, and construction phasing, if part of project.</td>
</tr>
</tbody>
</table>
### CONSTRUCTION DOCUMENTS (60% THROUGH THE FINAL DESIGN) – ANTICIPATED SUBMITTALS

#### ARCHITECTURAL DRAWINGS

- Title sheet with drawing index and project information.
- Demolition plans (if required).
- Floor plans, denoting all spaces and dimensions.
- Access plans showing proper clearances for repairing/maintaining/ replacing equipment.
- Planning grids for:
  - Raised access floors.
  - Reflected ceiling plans with all ceiling components.
- Roof plans showing slopes, low points, drains and scuppers, equipment pads, and accessories.
- Elevations, sections, and details, including:
  - Exterior elevations.
  - Interior elevations.
  - Building sections showing zones for mechanical and electrical, telecommunications, and fire protection systems.
- Wall sections.
- Details.
- Large scale plans.

Schedules.

#### STRUCTURAL DRAWINGS

- Demolition plans (when applicable)
- Structural construction drawings, including full dimensions, notes, and details
- Load criteria is indicated, including:
  - Floor live loads
  - Roof live load
  - Roof snow load
  - Wind load
  - Earthquake design data
  - Special live load reduction of the uniformly distributed floor live loads (if required)

- Code requirements, including:
  - Wind calculations.
  - Building category.
  - Wind exposure.
  - Internal pressure.
CONSTRUCTION DOCUMENTS (60% THROUGH THE FINAL DESIGN) – ANTICIPATED SUBMITTALS

- Seismic design criteria.
- Soil bearing pressure and lateral earth pressure.
- List of codes and standards used.
- Properties of all basic building materials.
- Schedules (as applicable) for:
  - Foundations, slabs, and decks.
  - Columns, walls, and beams.
- Structural details, including:
  - Steel connections.
  - Fire-rated assemblies, indicating UL numbers, restrained or unrestrained assembly, per Appendix X to ASTM E119 (the classification is determined by a licensed SE).
- Anchorage of building system equipment and nonstructural building elements.

MEP DRAWINGS

Mechanical Drawings

- Demolition plans (if required).
- Floor plan(s) showing:
  - Double line piping and ductwork layout.
  - Terminal air units.
  - Perimeter terminal units.
  - Locations of automatic control sensors.
- Roof plan showing all roof-mounted equipment and access to roof.
- Mechanical details, including:
  - Quarter-inch scale drawings of mechanical equipment room(s), all mechanical equipment, ductwork, and piping, including access and service requirements in plan, elevations, and cross-sections.
  - Valves, indicating locations where temperature, pressure, flow, contaminant / combustion gases, or vibration gauges are required, and if remote sensing is required.
- Fire dampers and volume control dampers.
- Double Line ductwork ahead of the distribution terminals are indicated (in true size).
- Single line schematic flow and riser diagram(s):
  - Airflow quantities and balancing devices for all heating/cooling equipment.
### CONSTRUCTION DOCUMENTS (60% THROUGH THE FINAL DESIGN) – ANTICIPATED SUBMITTALS

- Water flow quantities and balancing devices for all heating/cooling equipment.
- Flow/energy measuring devices for water and air systems for all cooling, heating, and terminal equipment, and their interface with the BAS.
- Automatic control diagrams, showing:
  - Sensors, valves, and controllers (analog and digital inputs for controllers, front end equipment, and system design).
  - Control signal interfaces, including sequence of operation of all heating, ventilating, and cooling systems during occupied, 24-hour, and unoccupied conditions.
- Schedules for equipment, including:
  - Chillers.
  - Boilers.
  - Pumps.
  - Air handling units.
  - Terminal units.
  - Cooling towers.
  - Equipment required for 24-hour operations.
- Air balance relationships between spaces.

### ELECTRICAL

**Electrical Drawings**

- Demolition plans (if required).
- Floor plans including dimensions, notes, and details.
- Raceway distribution for lighting, power distribution, and communications.
- Locations of fire alarms and annunciator panels.
- Single-line diagram of:
  - Primary and secondary power distribution (including normal power, emergency power, and UPS).
  - Fire alarm system.
  - Telecommunications system.
- Circuit layout of lighting control system.
- Details of underfloor distribution system.
- Site plan, indicating:
  - Service locations.
**CONSTRUCTION DOCUMENTS (60% THROUGH THE FINAL DESIGN) – ANTICIPATED SUBMITTALS**

- Manholes.
- Duct banks.
- Inspection technology.
- Surveillance equipment.
- Site lighting.
- Layout of electrical equipment spaces (including elevations of substation transformers and disconnect switches).
- Schedules for:
  - Switchgear.
  - Switchboards.
  - Motor control centers.
  - Panelboards.
  - Unit substations.
- Grounding diagram.
- Complete phasing plan (if required) for additions and alterations.

Storage areas for electrical equipment/spare parts.

**PLUMBING DRAWINGS**

- Demolition plans (if required).
- Floor plans, including layout and fixtures, equipment, and piping; large-scale plans should be used where required for clarity.
- Riser diagrams for:
  - Waste and vent lines.
  - Domestic cold and hot water lines.

Plumbing fixture schedule.

**FIRE PROTECTION DRAWINGS**

- Demolition plans (if required).
- Fire protection construction drawings, including dimensions, notes, and details.
- Fire protection details, including:
  - Building’s construction type.
  - Firewalls and smoke partitions.
  - Panel and curtain walls.
### CONSTRUCTION DOCUMENTS (60% THROUGH THE FINAL DESIGN) – ANTICIPATED SUBMITTALS

- Fire-stopping configurations.

- **Annunciation**, including:
  - Mass notification system equipment.
  - Fire alarm riser.
  - Electrical closets for fire alarm system panels.
  - Outdoor and indoor fire alarm speaker.
  - Typical alarm terminal cabinet.
  - Lay-in ceiling-mounted fire alarm speaker and combination speaker/strobe.
  - Wall-mounted strobe device.
  - Typical manual fire alarm box installation.
  - Fire alarm system input/output matrix.
  - Graphic annunciator panel.

- **Exiting** Requirements, including:
  - Stairs and horizontal exits.
  - Fire doors.
  - Stairway pressurization fans.
  - Security door hardware, including operation procedures.

- **Plumbing** Requirements, including:
  - Fire pump configuration and standpipe riser.
  - Anchorage of underground fire protection water supply lines.
  - Water flow switches and tamper switches.
  - Sprinkler floor control valves, sectional valves, and inspector text assembly.
  - Special fire extinguishing.
  - Typical firefighter telephone station and jack.
  - Fire alarm telephone panel and amplifier rack.
  - Visual indicating device control and power detail.
  - Typical location of duct smoke detectors.

Fire command center showing the locations of each panel to be installed.

### SECURITY PLANS

- Security systems site plan, with final locations of all security devices and conduit runs.
- Security system floor plans, including the layout of all security systems.
C.11.4 Specifications – Construction Documents (60% to Final Phase)

At the construction documents phase, the A/E submits a full set of specifications, including:

- Schedules for room finish, ceiling types, floor finish, color, and doors (can be incorporated into either the specifications or drawings).
- Building envelope thermographic scan identifying sources of heat transfer.
- Visual and performance mockups assemblies for spaces (i.e., inspection/processing stations and detention spaces).
- Architectural and Electrical lighting fixture type schedule.
- Historical preservation technical specifications for repair and restoration of historic materials, including:
  - Specialized materials and procedures for repair and restoration of historic materials.
  - Procedures for protecting historic materials in areas being altered.
  - Sample review requirements of repair and restoration procedures.

C.11.5 Cost Estimates – Construction Documents (60% to Final Phase)

Cost estimates are provided at the schematic design, design development, and construction documents phases as required, per this Standard, Section C.1.

C.11.6 Historical Preservation

Sample submittal requirements are provided for replacement materials and new installations in preservation zones.

C.12 ACCEPTANCE/OCCUPANCY PHASE

C.12.1 Project Closeout Schedule – CBP Acceptance/Occupancy Phase

The project closeout schedule includes coordinated dates for all inspections and special CBP installations, including but not limited to:

- Red zone inspection.
- The AHJ inspection.
- CBP surveillance system positioning and approval/system commissioning.
- The OIT cabling termination and Go-Live.
- Punch list walk-throughs.
- CBP occupancy.

The project closeout schedule is approved by the entire project team and is updated frequently to reflect project delays.

C.12.2 Equipment Manuals and Warranties – CBP Acceptance/Occupancy Phase

An operations manual is prepared, and training provided for the building operations and maintenance personnel describing the design objectives and how to operate the building. The manual includes equipment data, model
numbers for the equipment, parts lists, equipment options, operating manuals for each piece of equipment, testing and balancing reports and certifications, maintenance schedules, videos, and warranty schedules. The manual is reviewed and certified complete by the FOF PMO PM before submission to local CBP.

C.12.3 As-built Drawings – CBP Acceptance/Occupancy Phase

As-built drawings are provided to CBP in electronic and hard copy format for all projects.

C.12.4 Certificate of Occupancy – CBP Acceptance/Occupancy Phase

CBP may not occupy a facility until the AHJ has issued a Certificate of Occupancy to the FOF PMO PM. Issuance of a Certificate of Occupancy shall not signify approval of a violation of a national code, or a CBP design standard, or a requirement. The AHJ issues a Certificate of Occupancy to the FOF PMO PM once the AHJ has determined that fire protection and life safety systems have been completed, inspected, successfully tested and approved, and all outstanding fire and life safety deficiencies have been corrected to ensure a reasonable degree of safety to the building occupants from fire and similar emergencies.

The AHJ may be authorized to issue a temporary Certificate of Occupancy that allows partial occupancy of the building in a specific area(s), before completion of the entire project. The temporary Certificate of Occupancy identifies the specific area(s) of the project where occupancy is permitted; it will be issued if all life safety and fire protection systems serving the areas proposed for occupancy and all the floors below have been completed, inspected, successfully tested, and approved by the AHJ.

Following the issuance of a temporary Certificate of Occupancy, the AHJ sets a time frame for the completion of all remaining fire safety and fire protection systems and the correction of outstanding fire protection deficiencies. The AHJ issues a (final) Certificate of Occupancy to the FOF PMO PM once the AHJ has determined that fire protection and life safety systems have been completed, inspected, successfully tested, and approved, and all outstanding fire and life safety deficiencies have been corrected.

C.12.5 Commissioning Plan – CBP Acceptance/Occupancy Phase

The commissioning plan is turned over at the end of the construction phase. The commissioning plan is continuously updated by the commissioning agent throughout the predesign, design, construction, and occupancy phases of the building life cycle. At a minimum, the commissioning plan includes:

- Commissioning scope and overview, specific to the project.
- General project information.
- Commissioning team members, roles, and responsibilities.
- General communication plan and protocol.
- Commissioning process tasks and activities through all phases.
- Commissioning schedule.
- Commissioning process documentation and deliverables.
- Required testing procedures.
- Recommended training.
The following materials are added (as applicable) to the appendix of the completed commissioning plan:

- Owner's project requirements.
- Basis of design.
- Commissioning specifications.
- Design review.
- Submittal review.
- Issues log.
- Construction checklists.
- Site visit and commissioning meeting minutes.
- Systems manual review.
- Training.
- Functional performance and seasonal testing procedures.
- Warranty review.
- Test data reports.
- Sequence of operation (matrix).

C.13 ALTERATIONS PROJECT SUBMITTALS

Submittal requirements differ for new construction and renovation projects. For definitions of these project types, refer to this Standard, Chapter 2, Cargo Facilities Planning and Programming. All submittals follow the submittal requirements listed in the table below and as defined in this Standard, per the project scope.

Table C–6. Alterations Project Submittals

<table>
<thead>
<tr>
<th>PRE-DESIGN AND PROGRAMMING PHASE SUBMITTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Updated Facility Long-Term Master Plan</td>
</tr>
<tr>
<td>• Waiver/Deviation Approvals</td>
</tr>
<tr>
<td>• LEED Documentation / Energy Analysis</td>
</tr>
<tr>
<td>• Preliminary Concept Narrative/Drawings</td>
</tr>
<tr>
<td>• NEPA Documentation</td>
</tr>
<tr>
<td>• Site Survey</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SCHEMATIC DESIGN PHASE SUBMITTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Schematic Design Narratives</td>
</tr>
<tr>
<td>• Calculations/Code Analysis</td>
</tr>
<tr>
<td>• Waiver/Deviation Approvals</td>
</tr>
<tr>
<td>• LEED Documentation / Energy Analysis</td>
</tr>
<tr>
<td>• Schematic Drawings/Renderings / Photos</td>
</tr>
<tr>
<td>• Cost Estimates</td>
</tr>
<tr>
<td>• Design Review Forms</td>
</tr>
<tr>
<td>• Value Engineering Report</td>
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</tbody>
</table>
### DESIGN DEVELOPMENT PHASE SUBMITTALS
- Design Development Narratives
- Calculations/Code Analysis
- Waiver/Deviation Approvals
- LEED Documentation/Energy Analysis
- Design Development Drawings
- Cost Estimates
- Design Review Forms
- Value Engineering Report

### CONSTRUCTION DOCUMENTS PHASE SUBMITTALS
- Updated Building System/Site Narratives
- Updated Calculations/Code Analysis
- Specifications
- LEED Documentation / Energy Analysis
- Final Drawings
- Cost Estimates
- Design Review Forms
- Value Engineering Report

### CONSTRUCTION PHASE SUBMITTALS
- Bid/Award Reports
- Baseline Project Schedule
- Baseline Project Budget
- Updated Schedule/Budget
- Milestone Schedule
- Change Requests/Log
- Manufacturer Submittals/Shop Drawings
- Punch List

### CBP ACCEPTANCE / OCCUPANCY PHASE SUBMITTALS
- Project Closeout Schedule
- AHJ Certifications/Certificate of Occupancy
- LEED Certification
- Equipment manuals and warranties
- As-Built Drawings and Commissioning Plans
### Appendix D. Equipment

#### D.1 Introduction

Appendix D presents specifications for cargo processing equipment currently in use. These specifications are minimum requirements; however, U.S. Customs and Border Protection (CBP) shall be consulted before selecting the equipment. The Field Operations Facilities, Program Management Office Project Manager (FOF PMO PM) provides updated specifications and minimum requirements, based on the program of requirements (POR).

- Dual View X-Ray Machine
- Cargo Inspection Tables
- Video Spectral Comparator (VSC) Imaging System
- Pallet X-Ray Requirements by Interdiction Technology Branch (ITB)
- Handheld Requirements by the ITB
- Straddle-Arm Non-Intrusive Inspection (NII) Requirements by the ITB

#### D.2 Dual View X-Ray Machine

**D.2.1 Physical Specifications**

- Tunnel size is 1,000 mm width (WD) x 1,000 mm (HGT), or larger.
- Conveyor supports a 165 kg evenly distributed load.
- For ease of movement, the unit is mounted on heavy casters.

**D.2.2 Performance Specifications**

- Wire resolution, equal to or greater than, 38 American wire gauge (AWG).
- Steel penetration equal to or greater than 27 mm.
- Material separation of Low Z, Medium Z, and High Z to minimum of 0.5 Z accuracy.

**D.2.3 Safety Specifications**

Safety specifications comply with applicable health and safety regulations, including:

- U.S. Food and Drug Administration (FDA) X-ray systems (21 C.F.R. § 1020.40).
- Federal Communications Commission (FCC).
- International Fire Code (IFC).

Safety Specifications comply with:

- Maximum leakage radiation less than 0.1 mR/hr in contact with outer panels.
- ISO 1600/33 DIN film must be guaranteed up to 10 times exposure to radiation.
D.2.4 Features

- Horizontal and vertical view of inspection target.
- Multi-energy imaging (4 color).
- Density threat alert.
- High/low penetration.
- Variable gamma.
- Pseudo color.
- Variable density zoom.
- Organic/Inorganic stripping.
- Black and white viewing.
- Variable color stripping.
- Zoom.
- View previous bag.
- Automatic image archiving.
- Manual image archiving.
- Baggage counter.
- Search indicator.
- Date/time display.
- Remote workstation.

D.3 CARGO INSPECTION TABLES

D.3.1 Inspection Tables

- Tables must not be used for cargo storage.
- Two general inspection tables are required for inspecting miscellaneous cargo, occasional shipments of cut flowers, fruits, and vegetables.
- The minimum dimensions of the tables should be 36"h x 48"w x 96"l.
- The surface of the tables is cleanable and smooth. Stainless-steel table tops are preferred.

D.3.2 Fruit and Vegetable Inspection Tables

- Recommended for facilities that regularly processes fruits and vegetables. The fruit and vegetable tables may be constructed with more than two compartments.
- Tables contain a trapdoor which lifts/slides up easily.
- The tables incline or tilt 20 degrees.
- Each bin is 36” x 36” square.
- Maximum table ledge dimension is 12” high.
- The minimum dimensions of the tables should be 36”h x 48”w x 96”l.
- The surface of the tables is cleanable and smooth. Stainless-steel table tops are preferred.
- Hooks are conveniently located near top of table.
D.4 VIDEO SPECTRAL COMPARATOR IMAGING SYSTEM

D.4.1 Performance Specifications

Allow for inspection of:

- The UV-activated fluorescent features and fibers.
- Infrared (IR) activated anti-Stokes fluorescent features.
- Watermarks and metallic strips.
- Variations in the IR absorption and reflectance of inks and IR drop out inks.
- Retro-reflective images.
- Variations in the IR luminescence of inks.
- The diffractive optical variable devices (DOVD)s, holograms, and kinegrams.
- Surface features (embossed stamps, intaglio printing, and paper texture).
- Paper quality.
- Print quality.
- International Civil Aviation Organization (ICAO) coded data.
- Invisibly embedded information – invisible personal information (IPI).

D.4.2 Required Components

- Integrated monitor or 19” thin-film transistor (TFT) display screen.
- Embedded information decoder.
- The ICAO reader for e-passports and identification cards.
- The charge-coupled device (CCD) color/monochrome IR sensitive camera with zoom lens.
- Mirror image facility.
- Incident IR and visible light source.
- Transmitted IR and visible light source.
- Twin side light source, independently selectable.
- High-intensity transmitted spot light.
- A UV light source.
- Co-axial light source.
- Single manual keypad to control lamps and filters.

D.4.3 Document Imaging Software Required Functions

- Image comparison.
- Inset live and stored images.
- Inset two stored images.
- Overlay live and stored images.
- Strobe between two images.
- Image measurement, enhancement, integration, and archiving.
- Optical character reader (OCR).
APPENDIX E. NON-INTRUSIVE INSPECTION EQUIPMENT

E.1 RADIATION PORTAL MONITORS

E.1.1 Overview

A. System or Component Operation

Radiation portal monitors (RPMs) are designed and deployed at ports of entry (POEs) by the U.S. Department of Homeland Security (DHS) Domestic Nuclear Detection Office (DNDO), either by retrofit to existing facilities or by initial deployment coordinated with construction of new facilities. The RPMs detect nuclear materials. The RPMs are placed by the DNDO where commercial goods entering a cargo facility can be scanned. Alarm notification is provided by an RPM alarm annunciator. A U.S. Customs and Border Protection (CBP) officer acknowledges and mitigates the alarm and processes the vehicle.

The Field Operations Facilities Program Management Office Project Manager (FOF PMO PM) shall coordinate system/component selection and installation with the Office of Field Operations Non-Intrusive Inspection Program Management Office (OFO NII PMO). All cargo shall be scanned by the RPM. If a site’s footprint will not allow for fixed RPM equipment and system, then handheld RPM scanners shall be required. The FOF PMO PM will identify and coordinate the scanning requirements.

Figure E-1. Radiation Portal Monitors (RPMs)
B. Operational considerations

Key operational considerations for the DNDO RPM design are listed below:

- Vehicles must stop a sufficient distance upstream of the RPM to allow the RPM to obtain background radiation measurements prior to scanning. Stop signs and/or stop lines painted in the roadway can accomplish this. These should be located 10’ upstream of RPMs.
- Only one vehicle is routed through the portal at a time. This can be accomplished with appropriate signage upstream of the portal, such as a stop sign and a sign directing traffic to “STOP, PROCEED WHEN CLEAR”.
- Vehicles do not stop as they pass through the RPMs. This can be accomplished by locating the primary RPMs sufficiently upstream of the inspection booth so vehicles can pass through the portal before having to stop for inspection. Appropriate signage such as “DO NOT BLOCK PORTAL” and cross-striping of lane will be used.
- Vehicle speed must be controlled so the vehicle passes through the portal at 5 mph or less. The primary means of accomplishing this is by having the vehicles stop before they proceed through the portal. Speed bumps may be used upstream of RPMs. A speed limit sign may be used in addition to the speed bumps.
- When an alarm occurs, the officer in that lane must be able to quickly identify the vehicle that caused the alarm. This is accomplished by having the RPM sufficiently close to the booth so a queue of cars cannot develop between the RPM and inspection booth. See Table E.1 below for recommended RPM placement. Where this is not possible, cameras may be included in the design.

E.1.2 Technical Requirements

A. Location and Space

Criteria for the placement of the RPMs, as shown in the table below, are needed to ensure positive identification by providing line of sight, an accessible route to secondary inspection, and compatibility with other CBP equipment, e.g., license plate readers (LPRs), vehicle and cargo inspection systems, and empty truck portals. This also ensures the RPM detection requirements are met and minimizes adverse effects on port operations. Preferred placement is upstream of the LPR zone to avoid interference with the LPR system used by CBP. Portal monitors must be located away from areas of locally elevated background radiation.

Chokepoint RPMs may be used where there is insufficient room to place portal monitors on each lane or where other limitations exist. These chokepoint RPMs require special traffic control or monitoring features, which often includes VIS cameras.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Portal Type</th>
<th>POV Lane</th>
<th>Bus Lane</th>
<th>Cargo Lane</th>
<th>Wide Lane Cargo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upstream distance from booth</td>
<td>POV</td>
<td>40’</td>
<td>50’</td>
<td>80 to 120’</td>
<td>80 to 120’</td>
</tr>
<tr>
<td>Minimum distance from Empty Truck Portal source</td>
<td>100’</td>
<td>100’</td>
<td>100 to 120’</td>
<td>100 to 120’</td>
<td></td>
</tr>
<tr>
<td>Minimum distance from Eagle® source²</td>
<td>150’</td>
<td>150’</td>
<td>150’</td>
<td>150’</td>
<td></td>
</tr>
<tr>
<td>Minimum distance from VACIS® source²</td>
<td>100’</td>
<td>100’</td>
<td>100’</td>
<td>100’</td>
<td></td>
</tr>
</tbody>
</table>
The primary consideration for the placement of the primary inspection RPMs is the location and orientation of primary inspection lanes and booths.

As described later in this appendix, CBP employs numerous radiation emitting devices as part of the NII imaging capability. The impact of each type of NII equipment, which emits radiation that the RPMs can detect, needs to be evaluated by the NII equipment manufacturer in coordination with the OFO NII PMO. The FOF PMO PM shall consult the OFO NII PMO and the NII equipment manufacturer.

The recommended minimum distance an empty truck RPM can be deployed is 100’ from other RPMs. These distance requirements prevent the empty truck portal source from producing interfering background in the nearby RPMs. The empty truck portal source should not be pointed directly toward the RPM when in use. Therefore, the minimum distance a high-energy mobile truck X-ray system should be deployed is 150’ from any RPM. If the portal cannot meet the separation requirement, then the source must be mobile, shielded, or operationally controlled to meet secondary portal background requirements.

Other sources that may be encountered include pallet gamma ray on the dock, pulsed fast neutron analysis, high-energy gantry systems, empty truck portal systems, high-energy mobile NII systems, and other types of X-ray machines. If these types of systems are included in a design, contact the CBP Interdiction Technology Branch (ITB) project manager (FOF PMO PM shall consult with OFO NII PMO) for technical guidance on the required stand-off distance from the RPMs.

B. Primary Portal Placement

The following are general guidelines for primary portal placement:

- Designate a stopping point to control speed through the portal (using speed bumps as necessary and appropriate), prevent a vehicle from stopping in the portal, and prevent vehicles queuing between the portal and the inspection booth.
- Control vehicle queuing, which may be required on an exception basis, with signage and/or traffic lights to meet port specific needs.
- Locate the portal monitor prior to the existing inspection booths.
- Coordinate with other technology programs (empty truck portal, LPRs, etc.).
- Ensure other technology programs (empty truck portal, LPRs, etc.) will not interfere with portal placement.
- Ensure the RPMs do not obstruct the LPR camera views.
- Ensure the distance between the inspection booths and the portal permits vehicles are of reasonable length to completely pass through the portal before stopping for primary inspection.
- Ensure RPMs are within the direct line of sight of the inspection booth.

<table>
<thead>
<tr>
<th>Curb height</th>
<th>6”</th>
<th>6”</th>
<th>6”</th>
<th>6”</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSA recommended lane width</td>
<td>12’</td>
<td>14’</td>
<td>14’</td>
<td>16’</td>
</tr>
<tr>
<td>Representative stand-to-stand distance</td>
<td>11.8’</td>
<td>13.6’</td>
<td>14.0’</td>
<td>17.1’</td>
</tr>
</tbody>
</table>

(1) POV = privately owned vehicle.
(2) Other radiation sources may be encountered that have not been evaluated such as pallet NII on the cargo dock, pulsed fast neutron analysis, or other types of x-ray machines.
(3) Stand-to-stand distance is the distance between the RPM stands on either side of the lane. This distance is dependent on the background radiation level at the site. For specific background levels, the allowable stand-to-stand distance may be greater or less than these values.
C. Cargo

Cargo lanes require a cargo RPM. Portal monitors need to be at least 80' upstream of the inspection booth to allow enough distance for a standard tractor-trailer to proceed through the portal. Longer distances need to be employed with care on a case-by-case basis. Longer distances may be needed where tandem trailers are frequent, but encroachment into the portal needs to be avoided. A wide-lane portal is required for lanes wider than 16'.

Sites having tight approach turns to enter primary inspection may require computer simulation (AutoTURN®1 and/or field verification, such as placement of cones) to validate adequate clearance. Traffic-control devices must be used.

Wide-lane portal configurations may be used to accommodate approach issues where the approach is not straight.

The empty truck portal technology is deployed by CBP on primary cargo (typically empty) lanes. The RPM and the empty truck portal should be separated by a minimum of 100'.

D. Portal Spacing and Orientation Requirements

Spacing (stand-to-stand separation) requirements are based on cargo facility background radiation levels. Specific requirements for portal spacing and orientation are determined by DNDO and may include:

- Lanes should be designed as narrow as feasible (given existing conditions) to minimize stand-to-stand distances. Consultation with the OFO NII PMO is required to confirm the RPM lane widths. Background radiation measurements are necessary. Construction materials with elevated background radiation are prohibited, unless approved by the OFO NII PMO.
- The RPMs must be square across the lane.
- Stands must be level across lanes within 3”.
- Maximum curb height is 6”.

E. Installation

A RPM system is composed of the battery box that provides an uninterruptible power supply for the RPM, control box, alarm annunciator, Ethernet switch, supervisory computer, monitoring computer(s), and portal shrouds and radiation sensor panels. The supervisory computer, monitoring computer(s), circuit and Ethernet switch, and annunciator are located as directed by the FOF PMO PM. The portal is in the traffic lane. The control box, battery box, and portal can have three component configurations:

- Control box and battery box mounted remotely from the portal (typically at or near the inspection booth). This is the preferred location.
- Control box and battery box mounted on the portal. This is the default location.
- Control box and battery box mounted remotely from the portal in a centralized equipment bank. This is the least preferred location and this option should be selected only when it offers distinct advantages.

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1 AutoTURN is a registered trademark of Transoft Solutions, Inc.
F. Portal Foundation Requirements

Portal foundations provide structural support for the RPM portals. They must be sufficient to withstand the wind and seismic loads in the cargo facility geographic location. In addition, they provide:

- A level base for the stand footprint.
- The RPM protection through bullnoses, curbs, and bollards (concrete-filled steel posts).
- Structural support for associated equipment.

**Figure E-2. Example of an RPM Foundation**
An example of an RPM foundation is provided in Figure E-2. This is for a cargo RPM with a bullnose suitable for installation in a location with a minimum soil bearing pressure of 2500 psf., a maximum frost line of 2’ 6,” and maximum wind and seismic loads of 110 mph and 0.4 g, respectively. Foundations for specific installations vary, depending on local conditions, and need to be designed by a professional engineer.

G. RPM Protection and Traffic Control Devices

Concrete bullnoses, curbs, bollards, signage, lighting, and lane stop lines are positioned to protect the portal from equipment damage due to vehicular traffic. In some jurisdictions, the department of transportation (DOT) may request additional concrete jersey barriers and active crash attenuator equipment. Additional grounding devices are located on or near the RPM to protect the system from lightning strikes.

Traffic control devices include traffic light controllers (TLCs) and associated traffic lights, stop signs, stop lines, gate arms, directional pavement lines, bollards, and speed bumps. Stop lines should be placed 10’ from the leading edge of a primary RPM. The stop line for a secondary RPM should be placed at 20’ from the leading edge of the RPM. Speed bumps may be added at the entrance to the RPMs to ensure traffic slows down and stops before entering the RPM. This prevents excessive speed while transiting through the RPM.

H. Power

Back-up 120V alternating current (AC) power is required to operate a RPM system. At sites where backup 120 VAC power is not available, special arrangements (e.g., installation of a backup generator) may be required to meet this requirement. Branch circuit breakers are typically 15A and are compatible with existing commercially available locking mechanisms. Each RPM must be on a separate circuit breaker. Each RPM has a peak load of 3.5A. If next generation RPMs are deployed, their peak load may be greater. Grounding of equipment to support lightning suppression is required. Daisy-chain grounding is not permitted.

I. Information Technology/Data

Installation of the RPM infrastructure must be installed per the CBP Office of Information and Technology (OIT) Enterprise Network and Technology Support Division’s “Installation and Design Guidance Document: Communications and Network Infrastructure.” When installed in outdoor locations, the network equipment must operate in a temperature range of -40°F to a maximum of 149°F.

E.1.3 Challenges/Limitations

A. Compatibility with Other Equipment

Incompatibility includes conflicts of locating the RPMs near known cargo facilities radiation emitting equipment.

There are incompatibility issues with Western Hemisphere Travel Initiative (WHTI) and Land Border Integration (LBI) infrared identification (RFID) equipment. Placing the RPMs within the LPR zone, especially between the sensors, shall be avoided. There may be equipment modifications that can be implemented if such a location is necessary, as determined by CBP.

Employ conduits in the primary plaza where multiple interdiction technologies are being implemented.
B. Climate

The RPMs and associated equipment (control boxes and battery boxes) are designed to operate in a temperature range of -40°F to 140°F and an operating humidity range of 20% to 90% non-condensing. If mounted externally, network components, such as Ethernet switches and media converters, must also meet these specifications, and must be mounted in National Electrical Manufactures Association (NEMA) 4/4X enclosures. In colder climates, battery boxes may be remotely located in heated spaces.

E.1.4 Opportunities

A. Coordination/Integration with Other Equipment

As noted in Table E.1, the placement of the primary RPMs shall be coordinated/integrated with other equipment installed in the lanes upstream of the inspection booth. Coordination and integration of the LPRs in the POV lanes is required. As noted in Section E.1.2, the placement of the RPMs (especially secondary cargo) shall be coordinated with CBP (FOF PMO PM shall consult with the OFO NII PMO) and integrated with the placement of large-scale NII technology, such as gamma-ray and X-ray imaging equipment.

B. Standardization

The RPM designs for different ports will have a great degree of commonality based on the considerations presented. Differences in port layout, size, footprint, and operations make it impossible for DNDO to develop a standardized design for all ports.

E.2 EMPTY TRUCK PORTAL

E.2.1 Overview

A. System or Component Operation

An empty truck portal is a low-energy NII system used by CBP at cargo facilities. The portal is optimally located in pre-primary to scan only empty commercial trucks to verify that a truck is empty (i.e., no cargo, stowaways, hidden compartments, etc.). The portal system consists of two towers, aligned across from one another, spanning a pre-primary commercial traffic lane, see Figure E-2. The towers are protected by concrete bull-nose barriers, curbs, and bollards, with signage, a camera, and stoplights before and after the towers to control traffic flow. The operations of the portal are managed by an officer using a computer within the primary booth in the corresponding traffic lane.
B. Application to Cargo Facilities

The empty truck portal is applicable to cargo facilities and best suited for ports that have a moderate to high level of empty truck volume.

E.2.2 Technical Requirements

A. Location and Space

The towers of the empty truck portal are ideally placed in pre-primary in a dedicated empty truck lane. Alternately, but less desirable, tower locations may be immediately down-traffic of the primary booth or in a secondary inspection area.

The lane selected for portal placement should correspond to a lane that allows expeditious truck exit from the port since most scanned empty trucks are cleared for exit without secondary inspection. Assuming a counter-clockwise traffic flow, the lane best suited for the portal is typically the right or outside lane.

The typical layout of a portal lane includes the portal, the RPM, followed by the primary booth. A minimum 75' straight road section is required for truck ingress into the portal towers and a minimum 100' straight road section is required following the portal towers to allow for truck egress and adequate separation from the RPM.

The ideal cross-lane face-to-face distance between the portal towers is 17', which leaves 14' of clearance for truck traffic. The maximum cross-lane face-to-face distance between the portal towers is 21', which leaves 18' of clearance for truck traffic. A 5' protective perimeter is required around empty truck portal towers to maintain the appropriate width for travel lanes.

The radiation control area for the empty truck portal is essentially confined to the area between the towers, while the system is in operation. There are no requirements for ancillary radiation shielding of the empty truck portal system.

Figure E-3. Empty Truck Portal Towers
The operation of the empty truck portal is controlled by the officer via computer in the corresponding primary booth. The booth workspace should be adequately spaced for a UPS and computer workstation(s) as required in all primary booths. The booth should support the number of officers, identified by CBP, required for truck processing activity and empty truck portal image analysis.

B. Installation

Contact CBP (FOF PMO PM shall consult with the OFO NII and DNDO PMOs) for the most recent tower foundation and bolt pattern plans.

C. Power and Data

The system requires 220V, 30A single-phase power that is typically accessed at the corresponding primary booth. Conduit for future data links to the port office should be provided.

Power and data conduits are parallel to the traffic lane from the primary booth to the corresponding portal tower, traffic signals, and camera. There is one set of conduits that cross the traffic lane from tower to tower.

E.2.3 Challenges/Limitations

A. Compatibility with Other Equipment

The portal requires a minimum 100’ stand-off distance from an RPM or a next generation RPM. There are no other known conflicts with appropriately shielded systems.

B. Climate

The portal is designed to withstand temperatures ranging from 40°F to 140°F. The portal installation is the same for the northern and southern borders. Appropriate snow/ice removal shall occur to avoid snow accumulation or damage to the towers.

C. Snow Removal

Along the northern border Cargo Facilities, close cooperation with local agencies, DOTs, cities, and counties, responsible for snow removal is essential for winter operations. CBP operations require local agencies or private contractors to remove snow at Cargo Facilities, including RPM lanes. Snow plows vary in shape and size and may have difficulty negotiating portals.

E.2.4 Opportunities

The portals can be coordinated and integrated with other equipment.

Shared conduit trenching with other CBP technologies may be appropriate, but must maintain a minimum 6” of separation for power and data conduits.
E.3 HIGH-ENERGY GANTRY

E.3.1 Overview

A. System or Component Operation

CBP employs high-energy gantry NII systems at select cargo facilities in a secondary inspection/enforcement area to scan tractor-trailers with cargo. The system consists of an X-ray source on one side of a gantry and detectors on the opposite side. The gantry system moves on a series of rails during the scanning process, while the tractor-trailer or target vehicle remains stationary.

Traffic flow is managed with paint stripes, jersey barriers, signage, intercom, cameras, and stoplights. An officer guides the truck into the system, escorts the driver, and assists with processing the manifest. The typical process includes:

- The tractor-trailer enters the system.
- Officer and driver exit the scan area and go to the control room and driver’s waiting area, respectively.
- Tractor trailer is scanned.
- Computer images of the scanned truck are analyzed in a control room by an officer.
- Driver/truck is released or referred for further inspection.

B. Application to Cargo Facilities

A high-energy gantry system is applicable to cargo facilities and is best suited for ports that have a moderate to high level of laden truck volume. The high-energy systems are designed for the non-intrusive inspection of dense cargo.

E.3.2 Technical Requirements

A. Location and Space

The gantry system is located in the secondary inspection area with adequate space for truck queuing and exiting. The gantry system area shall consist of a flat concrete surface, while the surrounding pavement shall provide a minimum 1% grade away from the facility for drainage. High-energy gantry systems can be placed side-by-side with a system emission of not greater than 0.05 milli Roentgen Equivalent Man (mREM) per hour at the scan area boundary. Gantry vendors shall be required not to exceed 0.05 mRem per hour via shielding of the gantry system and/or installation of shield walls as necessary. If scanning systems/buildings are placed adjacent to each other, shielding is required to preclude interference between the systems as determined by CBP (FOF PMO PM shall consult with the OFO NII and DNDO PMOs). The gantry system building exterior must match and be compatible with the architectural features and design of other buildings in a cargo facility.

On the northern border, the gantry system is within a building with radiant heat flooring for the drive lane to melt snow and slush. On the southern border, the gantry system shall be within a building or under a canopy. The building or canopy shall be located to allow for the construction of a second building for the potential placement of a second, adjacent NII system.
The internal dimensions of the building or canopy shall be minimum 140’ long by 60’ wide. A 5’ buffer shall be available around the exterior of the building/canopy to allow placement of radiation shield walls as necessary. The thickness of the shield wall depends on the energy of the system and may be required to be 20” to 30” thick. High density concrete may be supplemented with other shielding, such as steel plates. Interior vertical clearance shall be a minimum of 28’ above the finished floor. No lighting fixture or component shall be installed below the 28’ clearance required. Adequate lighting shall be provided to allow the gantry operation on a 24-hour basis, with a minimum of 70 foot-candles at the inspection area. There shall be no skylights or windows in the building. Bird netting shall be installed. Options for roof shielding and 1’ minimum thick rolling concrete shield doors at the truck ingress and egress shall be considered by the FOF PMO PM in consultation with the OFO NII and DNDO PMOs.

Buildings shall include adequate exhaust systems to meet local codes for air exchange to remove commercial vehicle diesel exhaust. Buildings shall have two garage-type roll-up doors for truck ingress and egress. The door dimensions shall be a minimum 15’ wide by 16.5’ high. The door location shall be off-set 15’ from one side wall and 30’ from the other side wall. The gantry can be oriented in either direction based upon radiation safety considerations. The direction of the door offsets shall be coordinated with the ITB (FOF PMO PM shall consult with the OFO NII PMO) during the design development phase. A total of two personnel doors shall be located on the building; one door on each 15’ section of end wall. The 5’ buffer outside the door exit can be used by the vendor to install concrete vestibules, as deemed necessary for radiation protection.

The floor, internal to the building, shall be left unfinished for subsequent installation by the selected gantry vendor. This is necessary because floor thickness and flatness, gantry track layout, conduit runs internal to the building, and drainage runs internal to the building are vendor specific. The design and installation of all utilities external to the building (power, communications, data, storm water, etc.) are the responsibility of the cargo facility operator’s (CFO) architect/engineer (A/E) and general contractor, with those utilities terminated at a location internal to the building as coordinated with ITB.

In addition to the scan area, there are requirements for a driver’s waiting area and a 20’x10’ control room for gantry operations. The waiting area and control room shall be placed a minimum of 10’ beyond the exit end of the scan facility and a minimum 10’ from the outer edge of the driver’s side of the scan facility. The driver’s waiting area shall include at a minimum a “bus-type” weather shelter for the southern border and an enclosed climate-controlled area for the northern border. The waiting area shall be visible from the control room by line of sight. The 10’x20’ control room shall include adequate space and shelving for two computer systems, camera television and joystick, computer racks, etc., for each gantry system. There should be no travel or by-pass traffic lanes located between the scan facility and control room. On the northern border, a covered walkway shall be provided for officer and driver access to/from the scan facility to control room and waiting area.

The radiation control area for the gantry system is 140’x60’. As determined by CBP (FOF PMO PM shall consult with the OFO NII and DNDO PMOs), Wall Section Option 2B as presented on sheet NII-A-08 of the Enclosed NII Building shall be installed as part of the port project to maintain the radiation control area. If Wall Section Option 2B is not selected, then a 5’ buffer around the 140’x60’ area is necessary to allow vendor installation of shield walls if necessary. Due to potential subsurface constraints following the NII building installation, an adequate foundation to support a 30” thick, 24’ tall concrete shield wall must be installed within the 5’ buffer as part of the cargo facility design and construction. The foundation support requires...
adequate conduit runs and drains through the footers. Details of the conduit and drainage shall be coordinated with the ITB. The building structure shall have sufficient structural integrity so that the shield walls, if required, can tie into the building structure for lateral support.

B. Installation

The cargo facility design and construction of the scan building or canopy shall include shield walls via wall section option 2B, or if wall section option 2B is not selected, then foundation for shield walls around the scan building: the control room; the driver’s waiting area; and all utilities external to the scan building, as well as termination of utilities through the shield wall footers to a location internal to the scan building.

The gantry vendors shall complete utilities internal to the scan building; install the concrete floor internal to the scan building; install the gantry system, including rails; install system-specific light curtains, interlocks, cameras, etc., internal to the scan building; furnish the interior of the control room with the system-specific computer hardware; and install additional radiation shield walls as necessary.

C. Power and Data

The system requires 480V, 600A three-phase power. Terminate power to a disconnect switch that allows the vendor to tap into it for distribution to their equipment. At least one spare 4” conduit for power shall be installed and terminated in the scan building.

Two 4” and two 2” communication/data conduits shall be installed from inside the scan facility to the control room. Two 4” and two 2” communication/data conduits shall be installed from the control room to the cargo facility. Two 2” conduits shall be run from the scan facility to the control and to any RPM located within 500’ of the scan building for potential use for the RPM blanking. Designer shall coordinate with CBP (FOF PMO PM shall consult with the OFO NII and DNDO PMOs).

E.3.3 Challenges/Limitations

A. Compatibility with Other Equipment

The high-energy systems can be placed side-by-side with proper radiation shielding. High-energy and empty truck portal equipment shall not be placed side-by-side. For high-energy equipment, a minimum separation of 500’ or greater will be required. The exact distance shall be confirmed with manufacturers of both pieces of equipment and the OFO NII and DNDO PMOs.

B. Climate

The high-energy gantry systems are designed to withstand temperatures ranging from -40°F to 140°F. The climate-controlled portions of the gantry system are generally for the health and safety of CBP officers in the control room.

E.3.4 Opportunities

Systems can be coordinated or integrated with other equipment.
Placement of the control room within a larger NII operations building is allowable. Canopies and scan buildings shall be constructed to allow expansion or attachment of a second building for the potential placement of a second, adjacent NII system.

**E.4 HIGH-ENERGY MOBILE**

**E.4.1 Overview**

**A. System or Component Operation**

When available, CBP deploys a high-energy mobile NII system is employed by CBP in secondary inspection areas to scan commercial tractor-trailers that may be fully loaded with cargo or other selected conveyances. This is an X-ray system that is generally self-contained with the source, detector, and officer’s control room all mounted on a full-size truck chassis. The X-ray system source is located in the truck, and a boom that mounts the detectors extends out from the truck to encompass or surround the target vehicle. System/truck dimensions are about 40’ long, 10’ wide, and 13.5’ tall in the stowed position; and 40’ long, 29’ wide, and 17’ in the operational configuration with boom deployed. Designers shall confirm exact dimensions with the system manufacturer. Figure E-4 shows a sample high-energy mobile NII.

Traffic flow is managed with signage, ground markings, and officers. The target vehicle is parked; the driver must exit the vehicle prior to scanning operations. The mobile unit scans vehicles or commercial loads while moving the length of the target vehicle. Scanning operations can be completed one tractor trailer at a time (single scan) or multiple tractor trailers can be placed in a line for a continuous scan (line scan). Inside the system there are two officers, the system driver, and the system operator. The system operator analyzes the images, and radios to the ground officer for truck release or referral to subsequent intensive inspection.

![Figure E-4. Example of High-Energy Mobile NII](image)
B. Application to Cargo Facilities

High-energy mobile systems are deployed at ports with stationary NII limitations and that have a moderate to high level of laden truck traffic. The high-energy systems are useful for the NII of dense cargo.

E.4.2 Technical Requirements

A. Location and Space

The radiation control area, the 0.05 mREM per hour boundary, for a mobile system is 170' long (parallel to truck) and 140' wide (transverse to truck) for the scan of a tractor and trailer that is 75' in length. During line scans, the radiation control zone is lengthened by an amount equal to each tractor trailer length plus a 10' separation for each tractor trailer. Typically, 100’ or more of the radiation that is transverse to the truck extends down gradient from the source, while less than 40’ of the transverse radiation is up gradient of the source.

There are various techniques for the placement of a mobile unit, which mainly depend on the radiation control area, scan type (single or line), and available area. Techniques include:

- An evaluation of site-specific land-use conditions to take advantage of an operational scenario that allows the bulk of the transverse radiation to emit out across an undeveloped, on-port area that is controlled, marked, and never crossed by pedestrians, vehicles, etc.
- Locating the high-energy mobile system in a high-density traffic area. Systems may not be placed side by side with controlled areas touching, as the dose to that line would be 200 mREM per year (0.1 mREM per hour). Systems must be separated so that each system contributes no more than one half the allowable dose. As an example, the high-energy mobile systems are fielded side-by-side scanning away from each other. The driver’s side distance to the controlled zone would be elevated from 15’-22’ from each system or 44’ between the systems. This does not consider any system interference. The transverse dimension of the radiation control area can be reduced by erecting shield walls. The longitudinal radiation dimension (parallel to truck flow) cannot be reduced due to operational constraints.

If shield walls are desired as components of the site-specific design to maximize usable space, then the shield walls shall trend parallel to the mobile system. The walls shall be constructed of high-density concrete, with dimensions as follows: 20–30” thick (depending on system), 12’ tall, and a minimum 170’ long for a single truck scan. The walls shall be placed 5’ from the outside edge of a 40’ scan lane (i.e., 50’ separation between two shield walls). High-density concrete may be supplemented with other shielding, such as steel plates. Additional consideration for the height of the walls is to keep the canopy above the boom, which often extends 15’ to 20’ above ground level.

In addition to the above considerations, the following conditions apply. The mobile system is located in a secondary inspection/enforcement area that has adequate space for truck queuing and exiting. The mobile system area shall consist of a relatively flat surface (i.e., < 2% grade) that adequately drains away from the operations area.

Shelters for the officer and target vehicle driver are required and shall be located outside of the radiation control area. A “bus-type” weather shelter is suitable along the southern border, while a climate-controlled shelter should be provided for northern border operations.
When a mobile system is deployed, sheltering of the mobile system is required for general protection of equipment and personnel from harsh weather conditions. On the northern border, the mobile system may be located within a building with radiant heat flooring to melt snow and slush. On the southern border, the mobile system shall be positioned under a canopy or within a building. The building or canopy shall be constructed to allow expansion or attachment of a second building for the potential placement of a second, adjacent NII system.

The internal dimensions of a building need to be a minimum 170' long and 50' wide for single scan operations. The longitudinal radiation dimension exists inside the building footprint; however, the transverse dimension requires shielding or emission across demarcated and controlled undeveloped land. The internal dimensions of a canopy require a minimum width of 50'; the length can vary with a general standard of 100'. In this case, the longitudinal radiation dimension will not exist inside the canopy footprint, and as such, it shall be adequately demarcated by ground paint and/or other devices. The transverse dimension requires shielding or emission across demarcated and controlled undeveloped land.

Interior vertical clearance for building or canopy shall be a minimum of 28' above the finished floor. No lighting fixture or component shall be installed below the 28' clearance required. Adequate lighting shall be provided to allow mobile operation on a 24-hour basis, with a minimum of 70 foot-candle at the inspection area. Buildings shall include exhaust systems to meet local codes for air exchange to remove commercial vehicle diesel exhaust. High-energy mobile systems operated within a building are likely powered by the facility's electrical system. As such, vehicle exhaust from the mobile system may be precluded from air exchange calculations. Roofing for both buildings and canopies shall be designed to accommodate roof vents. Buildings shall have two garage-type roll-up doors for truck ingress and egress. The door dimensions shall be a minimum 15' wide by 16.5' high. The location of the door openings is vendor-specific and shall be coordinated with ITB during design. Bird netting shall be installed.

A secure, enclosed facility for storage of the 40' long, 10' wide, and 13.5' tall unit is required. This facility shall be powered by the electrical system with 230V 120A 3-phase 60 Hz with a 5-pin connector and an additional closest for storage of maintenance supplies. This secure facility may be incorporated into the building or the canopy.

B. Installation

The cargo facility design and construction shall include the shelter for officers and the tractor trailer drivers; shield walls, if required; and a canopy or scan building. The mobile vendors are not responsible for installing the infrastructure for mobile systems.

C. Power and Data

The mobile systems operate by an on-board generator. The system can operate via 230V, 120A three-phase power with 5-pin connector, which shall be made available in the scan area and storage area. The system data and images are stored on the local CPU in the on-board control room with download and transfer of that data by CD, DVD, thumb-drive, or alternate device (i.e., there is no attempt to link data from the mobile unit by data line back to the port office, etc.).
E.4.3 Challenges/Limitations

A. Compatibility with Other Equipment

The high-energy systems can be placed side-by-side with proper radiation shielding. High-energy and empty truck portal equipment shall not be placed side-by-side. The minimum stand-off distance from an RPM and a next generation RPM is 150'. The exact amount must be confirmed in coordination with CBP. The FOF PMO PM shall consult with the OFO NII and DNDO PMOs.

B. Climate

The facilities housing the high-energy mobile systems shall be designed for a temperature range from -40°F to 140°F. The climate control portions of the design system are for the health and safety of the CBP officers and equipment longevity.

E.4.4 Opportunities

Standardization is achieved by the guidelines presented and with construction, signage, and details listed in other sections of this standard. However, site specific conditions shall be evaluated for the most efficient deployment of a high-energy mobile system.

E.5 LOW-ENERGY FIXED SYSTEM FOR TRUCKS

E.5.1 Overview

A. System or Component Operation

The low-energy fixed system for trucks and buses is a multi-view drive through NII system employed by CBP at cargo facilities. The system can be located at the primary or secondary inspection areas to scan trucks. The systems have and will be periodically tested comprehensively and certified safe, at the CFO’s expense, for drivers and passengers to remain in the truck during the scanning process. The system consists of an arch-like structure spanning a traffic lane with three imaging modules, two on either side and one on the top. Future modifications to this system will likely include a fourth imaging module to allow scanning from the bottom. An integrated LPR is optional with the system and will be determined by CBP. The structure is protected by a height and width gauge, bollards, with signage, cameras, and a stoplight mounted onto the system to process traffic flow. The operations of the Z-Portal are managed by an officer with a computer, from within the operator’s booth, located next to the system.

B. Application to Cargo Facilities

The system is applicable to cargo facilities and is best suited for ports that have a moderate to high level of truck traffic. The system is useful for identifying organic material that may be hidden in fenders, tires, trunks, gas tanks, under the hood, and cargo holds.
C. Operational Considerations

Trucks are directed through the scanning system with the help of a traffic coordinator and traffic light mounted on the system. The system operator located in the operator’s booth toggles the portal traffic light button, turning the light from a red X (STOP) to a green arrow (PROCEED), indicating to the vehicle driver that it is safe to proceed through the portal tunnel.

The driver is directed to proceed through the portal tunnel at a nominal speed of 3.1 mph. The speed control is aided by a numeric display of the vehicle speed along with the use of speed bumps. After the vehicle has been scanned, the traffic control light reverts to the red X (STOP) to queue up the next target vehicle outside of the radiation-controlled zone.

X-ray images appear in real-time on the operator display inside of the operator booth and are automatically saved in the database along with the license plate data for each vehicle (optional). The officer analyzes the scanned images and highlights any anomalies with the “Mark and Annotate” functionality. If a manual inspection is necessary, the vehicle data set (including annotated images, license plate number, and photograph) may be printed and provided to a secondary inspection officer.

E.5.2 Technical Requirements

A. Location and Space

Typically, the system is located at the primary or the entrance to the secondary inspection area with careful planning for traffic volume and patterns. A truck bypass lane is also recommended after vehicles pass through the height/width gauge and before the entrance to the system. The vehicle height/width gauge should be in-line with the scan tunnel of the scan system and should be located approximately one to two
vehicle lengths before the system. The enclosure building exterior must match and be compatible with the architectural features and design of other buildings of the Cargo Facility.

The location of the system area should consist of a flat concrete surface with no overhead obstructions. The equipment footprint is approximately 29' x 9'. A service access area on either side of the system should also be free from permanent obstructions. Additional area is required for protection, sensors, and camera bollards. Adequate turn radii should be considered into and out of the system. An additional 10' is required on the ingress side and 20' is required on the egress side of the system for sensor bollards.

The typical layout of the system includes the scan system and operator's booth. The operators console must be within 200' of the scan system and shall offer a clear view of system operations. In addition, a total of two shelters for the CBP officers shall be located outside of the radiation control area (one shelter at system ingress and one shelter at system egress). Climate-controlled shelters should be provided for northern and southern border operations. Power of 110V 20A 60Hz or 220v 10A 50Hz is required in the operator booth for the system control computers.

The radiation control area for the system is confined to the area within the scan tunnel as well as 10' in front of and behind the tunnel while the system is in operation. There are no requirements for ancillary radiation shielding of the system.

The operation of the scan system is controlled by the officer with a computer in the adjacent operator booth. The interior size of the operator's booth shall have a minimum work surface area of 2'x8'.

Please contact the ITB (FOF PMO PM shall consult the OFO NII and DNDO PMOs) for more detailed site interface drawings.

B. Installation

The design and construction of the low-energy fixed system shall include:

- Site survey (including geotechnical and topographic data).
- Architectural and engineering design/build for system foundation.
- Installation of equipment.
- Operators booth (if required) with appropriate furnishings.
- System hardware and software.
- Integrated license plate reader.
- Vehicles gauge (height and width).
- Protective bollards.
- Vehicle guide rails.
- DHS approved vendor.

C. Power and Data

The system requires 230 VAC nominal +/- 10%, 60/50 Hz, 45 kVA, 3 phase power. This assumes clean, conditioned power is brought to the local power disconnect within 10' of the system and to a breaker box mounted on the scan system. Power must enter the system in the right imaging module from the entrance side. Underground conduits must be used. At least one spare 4" conduit for power shall be installed and terminated near the scan system. Two 4" and two 2" communication/data conduits shall be installed from
the control room to the cargo facility. Contact ITB for system-specific conduit details, including conduit runs from the scan system to the operator booth.

E.5.3 Challenges/Limitations

A. Compatibility with Other Equipment

The exact stand-off distance from the low-energy fixed system to an RPM or next generation RPM system should be reviewed by CBP (FOF PMO PM shall consult the OFO NII and DNDO PMOs) and the RPM manufacturer.

B. Climate

The low-energy fixed system is designed to withstand temperatures ranging from 0°F to 115°F and rain, snow, wind, and blowing sand. Canopies over the scan system are recommended in temperatures greater than 115°F.