

FOR OFFICIAL USE ONLY

# Cargo Facilities Design Standard

2019 (Draft)



U.S. Customs and  
Border Protection



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**PREFACE**

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

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## 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 (NII), 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.

CBP developed the CFDS pursuant to all of the following authorities: 19 C.F.R. Part 19 – Customs Warehouses, Container Stations and Control of Merchandise Therein; 19 C.F.R. Part 115 – Cargo Container and Road Vehicle Certification Pursuant to International Customs Conventions; 19 C.F.R. Part 118 – Centralized Examination Stations; and the Security and Accountability for Every (SAFE) Port Act of 2006, Pub. L. 109-347, 120 Stat. 1884.

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.



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1 This Standard is used to develop planning and programming criteria for inclusion in the program of  
2 requirements (POR), to direct execution of design and engineering documentation, and to inform construction  
3 and construction administration. This Standard also establishes project close-out and post-occupancy roles and  
4 responsibilities.

### 5 **1.2.1 Definition of the Cargo Facility Design Standard**

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

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

- 10 ● Cargo Inspection Facilities.
- 11 ● Centralized examination stations (CES.)
- 12 ● Cargo Warehouse Facilities.
- 13 ● Air Cargo Facilities.
- 14 ● Seaport Cargo Terminal Facilities.
- 15 ● Foreign trade zones (FTZs).
- 16 ● Intermodal Yard Facilities.

### 17 **1.2.2 Applicability**

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

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

### 35 **1.2.3 Use of Terms “Will,” “Shall,” “Must,” “Should,” and “May”**

36 The terms “Will,” “Shall,” “Must,” “Should,” and “May” are used throughout this Standard as defined below:



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- 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
- 4 course of action from more than one acceptable option.

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

7 **1.2.4 Current Edition of the Standard**

8 The most current signed edition of this Standard, including errata, on the date of project inception shall apply.  
9 Project inception is defined as the actual start of an in-house CBP planning or the date of contract with a  
10 consultant commissioned to provide planning, prospectus development, or similar. As projects move from  
11 planning phases to building and design phases, the date of project inception shall be revised to the date of  
12 contract with an A/E consultancy for development of a building project for design–bid–build delivery, or the date  
13 of issuance of a request for proposal (RFP) for a building project for design-build delivery.

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

23 A schedule of standard compliance is summarized below.

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

26 **Table 1-1. Schedule of Standard Compliance**

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



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<p><b>awaiting design funding</b></p>	<p>ensure that the design programming and budget allow the project to be designed and constructed to the updated/revised Standard.</p>
<p><b>Kick-off meeting is complete—design documents are less than 60% complete</b></p>	<p>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.</p>
<p><b>Design documents are greater than 60% but less than 90% complete</b></p>	<p>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.</p>
<p><b>Final design documents are issued for construction, but construction has been delayed.</b></p>	<p>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.</p>

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

3 **1.2.5 Standardization**

4 CBP standardizes elements that are common to most cargo facilities to ensure consistency in quality, cost, and  
 5 performance of the cargo facilities. This includes both building plans for the small port prototypes and functional  
 6 components, such as NII buildings and inspection booths. In addition to information provided within each  
 7 section, this Standard includes drawings, specifications, and other documentation for these standard items in  
 8 the appendices.



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1 Depending on project location, operations, and project constraints, the FOF PMO PM may identify certain  
2 standardized items to be mandatory (“shall”), strongly preferred (“should”), or preferred (“may”). These  
3 designations shall be included in the RFP for both design-bid-build and design-build project delivery. In the  
4 absence of these standardized items in the RFP, CBP shall identify standardized items on the schematic design  
5 to be incorporated in the design development phase. In all designations, the salient features of the standardized  
6 item as described in the room data sheets (RDSs), facility type narratives, specifications, fixtures, furniture,  
7 and component descriptions, within the main chapters or appendices, shall be incorporated into the design.

### 8 **1.2.6 Alternate or Equivalent Means, Exceptions, and Deviations**

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

11 Prior to the requirements review process and the final POR approval, a waiver request approved by a director  
12 of field operations (DFO) must be submitted as part of the project initiation documentation in accordance with  
13 the OFO Field Facility Request Initiation and Execution standard operating procedure (SOP) (MSD-F&T-  
14 003.01). The OFO mission support director (MSD) recommends approval or disapproval of design standard  
15 waivers/deviations to the FOF PMO.

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

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

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

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

### 35 **1.3 ORGANIZATION**

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



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### 1 1.3.1 Office of Field Operations

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

### 7 1.3.2 Office of Field Operations Cargo and Conveyance Security

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

### 12 1.3.3 Office of Field Operations Non-Intrusive Inspection

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

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

### 20 1.3.4 Office of Field Operations Canine Enforcement Program

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

### 24 1.3.5 Office of Field Operations Agriculture Program and Trade Liaisons Office

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

### 29 1.3.6 Office of Facilities and Asset Management, Facilities Management and Engineering

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

- 32 1. Field Operations Facilities.
- 33 2. Border Patrol & Air and Marine Facilities.
- 34 3. Mission Support Facilities.



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

### 3 **1.3.7 Field Operations Facilities Program Management Office**

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

### 8 **1.3.8 Land Border Integration Project Management Office**

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

### 12 **1.3.9 Office of Professional Responsibility, Security Management Division**

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

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

### 22 **1.3.10 Office of Information Technology**

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

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

### 30 **A. Integrated Logistics Branch**

31 The Integrated Logistics Branch (ILB) performs the maintenance, repair, and operational support for the  
32 NII program and radiation detection equipment (RDE) at Continental United States (CONUS) and  
33 Outside the Continental United States (OCONUS) locations. The ILB supports the Border Security  
34 Deployment Program (BSDP), providing centralized area video surveillance system (CAVSS) design,  
35 deployment, sustainment, and operational support at POEs. For the United States Border Patrol (USBP),  
36 ILB performs intermediate-level corrective maintenance, repair, and operational support for the remote



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1 video surveillance systems (RVSS), mobile video surveillance systems (MVSS), unattended ground sensors  
2 (UGS), and handheld agent support equipment (ASE). Other services provided by ILB include Tier 2 help  
3 desks; acquisition, testing, and logistic support for CBP program offices acquiring enforcement technology;  
4 project management; engineering analyses; warehouse management; asset management; equipment  
5 relocations; logistics analysis; metrics development and reporting; and other services as applicable.

### 6 B. Network Architecture and Engineering

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

### 12 C. Wireless Technology Program

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

### 19 D. Cargo Systems Program Directorate

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

### 25 E. Cybersecurity Directorate

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

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





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### 1 1.3.11 Printing, Graphics and Distribution Branch

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

### 9 1.3.12 Office of Human Resource Management – Occupational Safety and Health

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

### 13 1.3.13 Office of Public Affairs

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

### 17 1.3.14 Office of Chief Counsel

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

## 21 1.4 INSPECTION TECHNOLOGIES AND PROGRAMS

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

### 24 1.4.1 Non-Intrusive Inspection

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

### 29 1.4.2 Radiation Portal Monitor System

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



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**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**

Document Title (version as of CFDS publication date)	Responsible CBP Office
CBP Security Policy and Procedures Handbook, HB 1400-02B (August 13, 2009), or current edition and amendments	OPR – SMD
Use of Force Policy, Guidelines and Procedures Handbook, HB 4500-01C (May 2014), or current edition and amendments	Office of Training and Development
CBP Directive 5510-039, Local Area Network Standards and Backups (August 23, 2004)	OIT
CBP Directive 51711-004, CBP Lactation Support Program (January 25, 2011)	Human Resources Management – Benefits, Medical, and Worklife Division



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Document Title (version as of CFDS publication date)	Responsible CBP Office
CBP Directive 5270-014, Recycling Policy (December 29, 2015)	Office of Facilities and Asset Management (OFAM)– Environment and Energy Division
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)	OFO – Mission Support
Seized Asset Management and Enforcement Procedures Handbook, HB 4400 – 01B (July 2011), or current edition and amendment(s)	OFO – Fines Penalties and Forfeitures Division
DHS Management Directive (MD) 11030.1, Physical Protection of Facilities and Real Property (April 21, 2003)	Department of Homeland Security Management Directives System
Canine Enforcement Program Handbook, CIS HB 3200-07A (August 2002), or current edition and amendment(s)	OFO National Canine Enforcement Program (NCEP)
Information Systems Security Policies and Procedures Handbook, HB 1400-05D (November 16, 2017), or current edition and amendment(s)	OIT – CSD
Registration of Manufacturers, Distributors, and Dispensers of Controlled Substances, 21 C.F.R. §§ 1301.72 - 1301.76	U.S. Department of Justice, Drug Enforcement Administration
Facilities Standards for the Public Buildings Service, PBS P100 (April 2017), or current edition and amendment(s)	U.S. General Services Administration
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)	OFO – CCS
Foreign-Trade Zone Manual, Pub. No. 0000-0559A (2011), or current edition and amendment(s)	OFO – CCS
CBP Directive 2130-019, Information and Technology Activities (January 2, 2009), or current edition and amendment(s)	OIT



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Document Title (version as of CFDS publication date)	Responsible CBP Office
CBP Design Standards, or current edition or amendment(s)*	FOF PMO, Design Analysis and Engineering (DA&E) Section
CBP Directive 5270-005A, Acquisition of Free Federal Inspection Services Space for Customs Use (December 16, 1999), or current edition or amendment(s)	FM&E

1 \*CBP standards that are referenced here shall be followed, including draft standards and standards  
 2 implemented by CBP.

3 **1.6 AUTHORITIES SPECIFIC TO CARGO FACILITIES**

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

8 **1.6.1 CBP’s Authority to Inspect, Search, and Examine**

9 All cargo, merchandise, packages, shipments, and baggage arriving in, or departing from, the United States are  
 10 subject to inspection, search, and examination by CBP. The laws authorizing CBP inspection, search, and  
 11 examination include, but are not limited to, 19 U.S.C. §§ 482, 1433, 1434, 1459, 1461, 1467, 1496, 1499, 1581,  
 12 1582, 1595, 1644a; 6 U.S.C. § 231; 31 U.S.C. § 5317, and the CBP regulations that are promulgated at Title 19  
 13 of the Code of Federal Regulations and more specifically cited below.

14  
 15 **1.6.2 Bonded Warehouses**

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

17 **1.6.3 Container Stations**

18 CBP has the authority to regulate container stations under 19 C.F.R. §§ 19.40 – 19.49. CBP has the authority  
 19 to regulate cargo containers and the road vehicles used in the transport of cargo containers under 19 C.F.R. §§  
 20 115.1 – 115.68.

21 **1.6.4 Centralized Examination Stations**

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

23 **1.6.5 Foreign Trade Zones**

24 CBP has the authority to regulate the FTZs under 19 U.S.C. §§ 81l, 81r; 19 C.F.R. §§ 146.82, 146.83.



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### 1 1.6.6 Air Cargo Facilities

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

### 3 1.6.7 Radiation Portal Monitors

4 CBP is required to perform radiological examinations of cargo containers entering by vessel under the 6 U.S.C.  
5 §§ 921 – 926.

## 6 1.7 FACILITY TYPES AND OPERATIONAL DEFINITIONS

### 7 1.7.1 Bonded Warehouse

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

### 10 1.7.2 Centralized Examination Station

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

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

### 16 1.7.3 Foreign Trade Zone

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

### 23 1.7.4 CBP Operational Support Space

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

## 29 1.8 AUTHORITIES FOR CBP FACILITIES AND PROJECTS

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



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### 1 1.8.1 Applicability of Building Codes and Zoning Laws

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

### 8 1.8.2 Compliance with Nationally Recognized Codes, 40 U.S.C. § 3312

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

#### 13 A. Nationally Recognized Codes and Standards:

14 CBP has adopted the technical requirements of the family of codes issued by the International Code  
15 Council (ICC), except Chapter 10, Means of Egress. CBP has adopted the technical egress requirements of  
16 the National Fire Protection Association (NFPA), Life Safety Code (NFPA 101) ([www.nfpa.org](http://www.nfpa.org)), in lieu of  
17 the technical egress requirements of the ICC Chapter 10. The ICC codes are available at [www.iccsafe.org](http://www.iccsafe.org).  
18 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-  
19 build projects and the date of contract award with the A/E for design-bid-build projects.

#### 20 B. State and Local Codes

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

#### 27 C. Natural and Cultural Resources Compliance

28 CBP facilities shall comply with the following authorities:

- 29 ● NEPA, 42 U.S.C. §§ 4321 et seq. requires federal agencies to analyze the impact on the environment of  
30 major federal actions.
- 31 ● Council on Environmental Quality NEPA regulations, 40 C.F.R. §§ 1500–1508.
- 32 ● DHS Management Directive 023-01 Environmental Planning Program (October 31, 2014).
- 33 ● CBP Directive 5270-015, Environmental Planning Procedures (December 8, 2016)
- 34 ● CBP Directive 5270-008A, Environmental Management Program (July 5, 2007).
- 35 ● National Historic Preservation Act, 54 USC §§ 300101, 306108 and 306101. Requires federal agencies  
36 to consult with the Advisory Council on Historic Preservation regarding the impact of their



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- 1 undertakings on historic and cultural resources and to assume responsibility for the preservation of  
2 historic properties the agency owns or controls.
- 3 ● DHS Management Directive 017-01, Historic Preservation in Asset Management and Operations  
4 (March 10, 2008).
  - 5 ● Endangered Species Act, 16 U.S.C. §§ 1531 et seq. Requires federal agencies to consult with United  
6 States Fish and Wildlife Service, Department of the Interior, regarding possible impacts from  
7 construction on endangered and threatened species.

### 8 D. Environmental Compliance

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

- 13 ● CBP Memorandum from Executive Director, Asset Management, Requirements for Environmental Due  
14 Diligence on Property Transfers and Documentation of Categorical Exclusions (December 21, 2006).  
15 This memorandum explains that environmental site assessments must be completed upon acquisition  
16 of real property to be occupied by CBP.
- 17 ● DHS Management Directive 023-02, Environmental Management Program (May 8, 2013).
- 18 ● Clean Air Act, 42 U.S.C. §§ 7401 et seq.
- 19 ● Clean Water Act, 33 U.S.C. §§ 1251 et seq. Federal agencies are subject to state and local requirements  
20 for the protection of water quality pursuant to 33 U.S.C. § 1323.
- 21 ● Safe Drinking Water Act, 42 U.S.C. §§ 300f et seq.
- 22 ● Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901 et seq. This act regulates solid and  
23 hazardous waste treatment, storage and disposal; it contains requirements for installation, operation,  
24 and maintenance of underground storage tanks. It also addresses spent munitions. State and local laws  
25 similar to RCRA's statutory and regulatory requirements must also be observed by federal agencies  
26 pursuant to 42 U.S.C. § 6961.
- 27 ● Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 U.S.C. §§ 9601  
28 et seq. The CERCLA contains requirements for due diligence necessary to avoid liability for pre-existing  
29 contamination when acquiring real property.
- 30 ● Emergency Planning and Community Right to Know Act, 42 U.S.C. §§ 11002, 11021-11023 et seq. This  
31 Act establishes reporting requirements for facilities where hazardous chemicals requiring a material  
32 safety data sheet are used and stored.
- 33 ● Toxic Substances Control Act (TSCA), 15 U.S.C. §§ 2661-2671. The TSCA establishes acceptable levels  
34 of radon in a building. When the potential for elevated radon levels is identified during a site inspection,  
35 mitigation shall be incorporated in the design and construction, including the most current standards  
36 set by the Environmental Protection Agency (EPA) for construction methods to reduce radon levels  
37 below levels set by the EPA.
- 38 ● Energy Independence and Security Act of 2007, 42 U.S.C. § 17094, Storm Water Runoff Requirements  
39 for Federal Development Projects.
- 40 ● Federal Acquisition Regulation (FAR), Part 23, Environment, Energy and Water Efficiency, Renewable  
41 Energy Technologies, Occupational Safety, and Drug-Free Workplace.



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### 1 E. Construction Materials

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

- 5 ● Asbestos: Abatement must be performed in compliance with TSCA, 15 U.S.C. §§ 2641-2656, regulations  
6 of the Occupational Safety and Health Act (OSHA), 29 C.F.R. § 1926.1101, and the Clean Air Act, 40  
7 C.F.R. § 61.145. Requirements for packaging and transportation of removed asbestos is addressed in  
8 the Department of Transportation regulations, 49 C.F.R. §§ 171-172 and § 173.216.
- 9 ● Lead Paint: Lead-based paint hazards are addressed in TSCA, 15 U.S.C. §§ 2681-2692, the Lead-Based  
10 Paint Poisoning Prevention Act, 42 U.S.C. §§ 4821 et seq. and the Residential Lead-Based Paint Hazard  
11 Reduction Act, 42 U.S.C. §§ 4851 et seq. Worker safety during renovation projects encountering lead  
12 paint must comply with OSHA, 29 C.F.R. § 1926.62.
- 13 ● Urea formaldehyde: 29 C.F.R. § 1910.1048.
- 14 ● Polychlorinated biphenyls: PCB-containing items must be disposed in accordance with TSCA, 15 U.S.C.  
15 § 2605(e).
- 16 ● Solder or flux must be “lead free,” which means they may not contain more than 0.2% lead, and not more  
17 than a weighted average of 0.25% lead when used with respect to the wetted surfaces of pipe, pipe  
18 fittings, plumbing fittings, and fixtures, as provided in the Safe Drinking Water Act, 42 U.S.C. § 300g-  
19 6(a), (d).
- 20 ● Ozone depleting compounds should be eliminated during and after construction when alternative  
21 environmentally preferable products are available, consistent with either the Montreal Protocol and  
22 Title VI of the Clean Air Act Amendments of 1990 (42 U.S.C. §§ 7671 et seq.), or equivalent overall air  
23 quality standards that consider life cycle impacts.
- 24 ● Building materials should meet or exceed EPA’s recycled content recommendations and/or the United  
25 States Department of Agriculture’s bio-based content recommendations or are otherwise  
26 environmentally preferable (e.g., see Federal Green Construction Guide for Specifiers at  
27 <http://www.wbdg.org/ffc/epa/federal-green-construction-guide-specifiers>. Materials should also meet  
28 performance requirements and be available at reasonable costs.

### 29 F. Energy and Resource Conservation

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

- 31 ● Planning for Federal Sustainability in the Next Decade, Executive Order 13693, 80 FR 15871 (March  
32 19, 2015).
- 33 ● Federal Leadership in Environmental, Energy, and Economic Performance, Executive Order 13514,  
34 (October 5, 2009).





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- 1 ● High Performance and Sustainable Buildings Guidance (December 1, 2008)
- 2 ([http://www.wbdg.org/FFC/FED/hpsb\\_guidance.pdf](http://www.wbdg.org/FFC/FED/hpsb_guidance.pdf))
- 3 ● Energy Independence and Security Act of 2007, PL 110-140, 121 Stat. 1492, §§ 433(a), 433(b), 433(c)
- 4 and 433(d), 434, 438, and 523 (codified as 42 U.S.C. §§ 6834, 6832, 6834, 8253, 17094, 6834, respectively).
- 5 ● Energy Policy Act of 2005, PL 109-58, 119 Stat. 594, §§ 103, 109, and 203 (codified at 42 U.S.C. §§ 8253,
- 6 6834, and 15852, respectively).

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

- 9 ● 10 C.F.R. Part 433, Energy Efficiency Standards for New Federal Commercial and Multi-Family High-
- 10 Rise Residential Buildings.
- 11 ● 10 C.F.R. Part 434, Energy Code for New Federal Commercial and Multi-Family High Rise Residential
- 12 Buildings.
- 13 ● 10 C.F.R. Part 435, Energy Efficiency Standards for New Federal Low-Rise Residential Buildings.
- 14 ● 10 C.F.R. Part 436, Federal Energy Management and Planning Programs.
- 15 ● DHS Management Directive 025-01, Sustainable Practices for Environmental, Energy, and Economic
- 16 Performance (April 12, 2012).
- 17 ● FAR Part 23, Environment, Energy and Water Efficiency, Renewable Energy Technologies,
- 18 Occupational Safety, and Drug-Free Workplace.

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

- 21 ● RCRA § 6002 (codified at 42 U.S.C. § 6962), for EPA-designated products).
- 22 ● Farm Security and Rural Investment Act, § 9002 (codified at 7 U.S.C. § 8102), for U.S. Department of
- 23 Agriculture (USDA)-designated products.

### 24 G. Facility Design and Infrastructure

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

### 28 H. Information Technology

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

### 33 I. Security

34 The DHS Management Directive 11030.1, Physical Protection of Facilities and Real Property (April 21,  
35 2003). This includes general requirements for perimeter walls, perimeter doors, secure storage rooms,  
36 weapons and ammunition storage, reception/clerical areas, cleaning force/answering service, and evidence



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1 vaults. All security features shall comply with the latest edition of the CBP Security Policy and  
2 Procedures Handbook (SPPH).

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

5 CBP Directive 3340-030B, Secure Detention, Transport and Escort Procedures at Ports of Entry (August  
6 8, 2008), which includes general considerations for detention conditions in compliance with the latest  
7 edition of the SPPH. The Port Security Assessment Coordinator will ensure design efforts for new  
8 construction and renovation of detention facilities comply with:

- 9 1. DHS regulations implementing Prison Rape Elimination Act (PREA), codified in 6 CFR Part 115,  
10 Subpart B – Standards for DHS Holding Facilities.
- 11 2. CBP Holding Facilities will follow CBP Directive No. 2130-030, Prevention, Detection, and Response  
12 to Sexual Abuse and/or Assault in CBP Holding Facilities (January 19, 2018).
- 13 3. CBP has a zero-tolerance policy (ZTP) prohibiting all forms of sexual abuse and assault of individuals  
14 in CBP custody, including holding facilities, during transport, and during processing. CBP is  
15 committed to protecting the safety of individuals in CBP custody. CBP policy provides effective  
16 safeguards against sexual abuse and assault for individuals in CBP custody.

17  
18 K. Accessibility

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

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

25 L. Firearms

26 Customs Handbook HB 4500-01C.

27 M. Metric System

28 Executive Order 12770, Metric Usage in Federal Government Programs, 56 Fed. Reg. 35801 (July 25,  
29 1991). This executive order requires federal departments and agencies to implement metric usage in  
30 procurements, grants, and business-related activities.

31 N. Narcotic Storage

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

### 33 1.9 ADDITIONAL DOCUMENTS

34 In addition to this Standard, the CFO shall adhere to the latest edition of the following documents in force on  
35 the date of issuance of an RFP for design-build projects and the date of contract award with A/E's for design-bid



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- 1 build projects except where CBP requirements are more stringent. Deviations must be presented to and  
2 approved in accordance with the FOF Project Change Management Process (FOF-0300-CMP). Further details  
3 can be found in this Standard, Section 1.2.6, Alternate or Equivalent Means, Exceptions, and Deviations.
- 4 A. The POR: Each project will be defined in a written document approved by CBP for individual port  
5 construction projects, including space requirements, time schedules, and other specific requirements unique  
6 to that individual project.
- 7 B. Standards for Rehabilitation and Guidelines for Rehabilitating Historic Structures (issued by the Secretary  
8 of the Interior): This document defines the procedures and requirements of federal agencies when dealing  
9 with historic structures. See 36 C.F.R. Part 67-68.
- 10 C. State Department of Transportation Standards: Reference the roadway designs published by the local State  
11 Department of Transportation (DOT). All traffic circulation and routing signage shall follow the criteria  
12 contained in the Manual on Uniform Traffic Control Devices (MUTCD) adopted by the DOT in the state each  
13 project is located.
- 14 D. State and local codes, where applicable: refer to Section 1.8.1. Applicability of Building Codes and Zoning  
15 Laws.
- 16 E. The Risk Management Process for Federal Facilities: An Interagency Security Committee Standard, 2<sup>nd</sup>  
17 edition, November 2016).
- 18 F. Federal Acquisition Regulation (FAR).
- 19 G. Department of Justice (DOJ): reference physical security standards, including forced entry, bullet resistance,  
20 and secure storage classifications, to be coordinated with CBP SPPH requirements.
- 21 H. SAFE Port Act 2006, Pub. L. 109-347, 120 Stat. 1884.

### 1.10 FACILITY PLANNING AND DESIGN CONTACTS

23 Questions regarding this Standard and related facility planning and design requirements shall be  
24 directed to OFAM, FOF PMO, Design Analysis and Engineering at  
25 [DesignStandardsFOF@cbp.dhs.gov](mailto:DesignStandardsFOF@cbp.dhs.gov).

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# FACILITIES PLANNING AND PROGRAMMING

## Cargo Facilities Design Standard 2019 (Draft)



**U.S. Customs and  
Border Protection**

Photo: Hensel Phelps

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**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, or 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**

Role	Responsibility
Port Director	<ul style="list-style-type: none"> <li>• Receives application for project.</li> <li>• Verifies necessary documentation is provided.</li> <li>• Notifies the field office immediately of potential project.</li> <li>• Conducts feasibility review with the field office.</li> <li>• Passes application to the field office.</li> </ul>
Field Office	<ul style="list-style-type: none"> <li>• Notifies the OFO Facilities and Technology Division (F&amp;TD) immediately of potential project.</li> <li>• Conducts feasibility review.</li> <li>• Reviews application for operational requirements, staffing, and budget.</li> <li>• Submits the field facility request (FFR) to the OFO F&amp;TD for approval.</li> </ul>
OFO F&TD	<ul style="list-style-type: none"> <li>• Appoints the OFO program manager (PgM).</li> <li>• Notifies the FOF PMO of approval.</li> <li>• Refines program of requirements (POR) with the field office/port director (PD) if there are any unresolved issues.</li> <li>• Coordinates requirements among the OFO stakeholders.</li> </ul>
FOF PMO	<ul style="list-style-type: none"> <li>• Appoints the FOF PMO PM.</li> <li>• Coordinates all communication after application is submitted.</li> <li>• Interfaces with the OFO PgM.</li> </ul>
FOF PMO PM	<ul style="list-style-type: none"> <li>• Coordinates CBP requirements.</li> <li>• Coordinates design reviews with CBP stakeholders through all phases of design.</li> <li>• Coordinates construction administration and project closeout.</li> <li>• Acts as the sole point of contact with the CFO on behalf of the OFO, OIT, OPR, and OFO F&amp;TD.</li> <li>• Processes change requests (CR) (with approval from the FOF PMO and OFO leadership for high-level requests).</li> <li>• Interfaces with the OFO PgM.</li> <li>• Disseminates technical requirements related to CBP.</li> </ul>

**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.



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### 1 A. Design-Bid-Build

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

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

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

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

### 12 B. Design-Build

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

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

- 18 1. Programming and concept design.
- 19 2. Competitive bidding and negotiation.
- 20 3. Design documentation and construction.

## 21 2.4 PROJECT DEVELOPMENT, REVIEW, AND APPROVAL PHASES

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

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

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

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

- 31 A. The CFO determines industry need.
- 32 B. CBP approval of the CFO project.
- 33 C. Pre-design and programming phase.
- 34 D. Schematic design phase.
- 35 E. Bidding and negotiation phase (design-build).



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- 1 F. Design development phase.
- 2 G. Construction documents phase.
- 3 H. Bidding and negotiation phase (design-bid-build).
- 4 I. Construction phase.
- 5 J. Acceptance.
- 6 K. Beneficial occupancy and project close out.

### 7 **2.4.1 Project Implementation Phases**

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

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

20 The FOF PMO PM will remain CBP's sole point of contact throughout the project. The FOF PMO PM coordinates  
21 with OFO management (at the port, field office, and F&TD) during each phase. The CFO, A/E, and CFO's  
22 contractor(s) shall only take direction from CBP through the FOF PMO PM.

23 Regarding the project phase submissions outlined below, the A/E should refer to Appendix C for complete  
24 submittal requirements. These submittals are required for CBP stakeholders to ensure CBP requirements are  
25 met and the project planning, design, and construction phases are progressing.

26





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1 A. Cargo Facility Operator Determines Industry Need

Role	Responsibility
CFO	<p>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.</p> <ul style="list-style-type: none"> <li>• Full description of cargo facility.</li> <li>• Summary of cargo operations/intended facility managers and carriers.</li> <li>• Estimated volume of transactions.</li> <li>• Application processing fee.</li> <li>• List of principal company officials.</li> <li>• Projected start-up date and hours of operation.</li> <li>• Signed agreement(s) between CFO and CBP.</li> </ul>

2 B. CBP Approval of the CFO Project

Role	Responsibility
Director, Field Operations	<ul style="list-style-type: none"> <li>• Reviews and coordinates the CFO request within CBP.</li> <li>• Determines operational and logistical feasibility.</li> <li>• Provides formal determination and notification of project approval to the CFO.</li> </ul>
OFO Field Office	<ul style="list-style-type: none"> <li>• Provides the project understanding agreement (PRUA) with the CFO who, in turn, reviews, signs, and returns the PRUA to OFO Field Office.</li> <li>• Identifies the field office project points of contact.</li> </ul>
OFO F&TD	<ul style="list-style-type: none"> <li>• Provides the OFO program level oversight, coordination, and reporting functions.</li> <li>• 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.</li> <li>• Approves the FFR.</li> <li>• Notifies the FOF PMO of project and required operational details through memorandum.</li> </ul>
FOF PMO	<ul style="list-style-type: none"> <li>• Provides the OFAM program level oversight, coordination, and reporting functions.</li> <li>• Issues this Standard and other applicable standards to the CFO.</li> <li>• Assigns an FOF PMO PM.</li> </ul>



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FOF PMO PM	<ul style="list-style-type: none"> <li>• Coordinates any project related meetings.</li> <li>• Acts as CBP’s single project point of contact to the CFO for all project related issues.</li> </ul>
------------	---

- 1 C. Pre-Design and Programming Phase
- 2 This phase comprises preliminary site planning and analysis, detailed programming, and concept development.
- 3 Site planning and analysis shall refine the preferred configuration, placing all site elements and buildings with
- 4 respect to each other, and security parameters. The program is expanded from the POR to include detailed
- 5 information for each function and space based on this Standard and further collaboration with the stakeholders
- 6 and project team(s).
- 7 The initial project kick-off meeting between CBP, the CFO, and the A/E serves as the event when the A/E
- 8 receives the necessary direction from the CFO to begin the planning, programming, and design for a new facility
- 9 or a facility renovation. The CFO should contact CBP during these early phases to valid space requirements
- 10 and to advise of special situations that may require alternate or equivalent means, exceptions, or deviations
- 11 from this Standard. The design review process will be established for each project at this initial meeting.

Role	Responsibility
Field Office	<ul style="list-style-type: none"> <li>• Develops and finalizes the POR, including all required facilities, spaces, technologies, and infrastructure needed for CBP to perform its duties.</li> <li>• Submits the POR to F&amp;TD.</li> <li>• Receives cost sign-off (CSO) from OIT.</li> <li>• Coordinates with the FOF PMO PM to document the CFO’s agreement to reimburse CBP for those costs.</li> </ul>
F&TD	<ul style="list-style-type: none"> <li>• Assists the field office with finalization of the POR and provides validation.</li> </ul>
OIT	<ul style="list-style-type: none"> <li>• Conducts the network analysis based on anticipated operational requirements for the development of the CSO.</li> <li>• Develops and submits the CSO to the field office and FOF PMO PM.</li> <li>• Reviews the CFO’s agreement to reimburse CBP for accuracy.</li> <li>• Purchases and installs items duly identified and for which the CFO has agreed to pay reimbursement to CBP.</li> </ul>
FOF PMO PM	<ul style="list-style-type: none"> <li>• Coordinates with the CFO’s A/E in close coordination with OFO for site-specific/design considerations.</li> <li>• Schedules required CBP reviews and acceptances.</li> <li>• Coordinates and seeks approvals from CBP on:                             <ul style="list-style-type: none"> <li>• Functional adjacency.</li> <li>• The OPR Security Management Division (SMD) threat-based assessment.</li> <li>• Concept development.</li> <li>• Facility long-term master plan (typically 10 years).</li> </ul> </li> </ul>



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	<ul style="list-style-type: none"> <li>• Identifies other agencies involved in CBP Security Area (CSA) facility once CBP approves project.</li> <li>• Coordinates with the CFO in close coordination with the field office, F&amp;TD, and other government agencies (OGA) (to conduct required reviews and approvals of planning documents).</li> <li>• Receives the CSO from the OIT and coordinates with the Field Office to document the CFO’s agreement to reimburse CBP for those costs.</li> <li>• Ensures design compliance with the POR.</li> <li>• Ensures all project and pre-design phase approvals are completed before schematic design development.</li> <li>• 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.</li> </ul>
FOF PMO	<ul style="list-style-type: none"> <li>• Provides OFAM program level oversight, coordination, and reporting functions.</li> </ul>
OGA	<ul style="list-style-type: none"> <li>• Provides planning and programming input to ensure adequate facility design.</li> </ul>
CFO	<ul style="list-style-type: none"> <li>• Returns completed free space questionnaire to the FOF PMO PM.</li> <li>• Begins project pre-design and programming upon approval from the FOF PMO PM.</li> <li>• Coordinates with the FOF PMO PM for requirements, reviews, and approvals.</li> <li>• Prepares project schedule.</li> </ul>

- 1 D. Schematic Design Phase
- 2 Site development is key to a successful cargo facility. Emphasis is placed on site planning during the schematic
- 3 design phase. Buildings, structures, roadways, parking areas, and freestanding monitoring equipment should
- 4 be situated to ensure proper site security, functional interrelationships, and vehicle/pedestrian processing.
- 5 Schematic design advances the blocking diagrams, delineating the adjacencies, circulation, and spatial aspects
- 6 within each functional area, and combining the functional areas into a coherent plan. Building sections and
- 7 exterior elevations options are studied.
- 8 The schematic design phase is the first design phase for larger projects. For minor projects, the schematic design
- 9 phase tasks may be combined with design development into a single design phase.
- 10

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Role	Responsibility
A/E	<ul style="list-style-type: none"> <li>• Begins the schematic design phase upon receiving written approval from the FOF PMO PM.</li> <li>• Coordinates with the FOF PMO PM for requirements, reviews and approvals.</li> <li>• Develops a schematic design submission incorporating elements as outlined in Appendix C.</li> <li>• Ensures completion of schematic design package.</li> <li>• Distributes the design documents to the FOF PMO PM for review.</li> </ul>
FOF PMO	<ul style="list-style-type: none"> <li>• Provides OFAM program level oversight, coordination, and reporting functions.</li> </ul>
FOF PMO PM	<ul style="list-style-type: none"> <li>• Coordinates with the CFO’s A/E and OFO to conduct required CBP stakeholder schematic design reviews and acceptances to ensure accuracy and effective implementation of the POR.</li> <li>• Coordinates approval of schematic design, site plan, and security requirements with OPR.</li> <li>• Schedules design reviews and compiles comments.</li> </ul>

1 E. Design Development Phase

Role	Responsibility
A/E	<ul style="list-style-type: none"> <li>• Begins the 30% design development phase upon receiving written approval from the FOF PMO PM.</li> <li>• Coordinates with the FOF PMO PM for reviews and approvals. 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.</li> <li>• Shall refer to Appendix C for design development submittal requirements.</li> <li>• Ensures completion of 30% design package.</li> <li>• Distributes the 30% design package to the FOF PMO PM for review.</li> </ul>
FOF PMO	<ul style="list-style-type: none"> <li>• Provides the OFAM program level oversight, coordination, and reporting functions.</li> </ul>
FOF PMO PM	<ul style="list-style-type: none"> <li>• Coordinates with the CFO’s A/E and OFO to conduct required CBP stakeholder 30% design reviews.</li> <li>• Collects comments from CBP stakeholders to ensure implementation of the POR, to address site-specific/design considerations, and to ensure compliance with design standards.</li> </ul>



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	CBP spaces are reviewed in detail for operational, technical, security, and functional requirements.
--	--

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

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

Role	Responsibility
A/E	<ul style="list-style-type: none"> <li>• Begins the 60% design phase upon receiving written approval from the FOF PMO PM.</li> <li>• Coordinates with the FOF PMO PM for reviews and approvals from the 60% review through final design documents.</li> <li>• Reconciles all review comments.</li> <li>• Ensures completion of construction documents.</li> <li>• Distributes the design documents to the FOF PMO PM for review.</li> </ul>
FOF PMO	<ul style="list-style-type: none"> <li>• Provides the OFAM program level oversight, coordination, and reporting functions.</li> </ul>
FOF PMO PM	<ul style="list-style-type: none"> <li>• Coordinates with the CFO's A/E and OFO to conduct required CBP stakeholder 60% design reviews.</li> <li>• 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.</li> <li>• Retains oversight authority for the project and provides close coordination with the PD, PD-designated point of contact, or other CBP representatives.</li> </ul>



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1 G. Bidding and Negotiation (Design-Bid-Build)

Role	Responsibility
CFO	<ul style="list-style-type: none"> <li>• Proceeds with the bidding and award for construction of the project upon receiving written approval from the FOF PMO PM.</li> <li>• Develops statement of work and solicitation documents including the completed drawings, specifications, and instructions for bidders and the bid form.</li> <li>• 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.</li> </ul>
FOF PMO	<ul style="list-style-type: none"> <li>• Provides the OFAM program level oversight, coordination, and reporting functions.</li> </ul>
A/E	<ul style="list-style-type: none"> <li>• Answers requests for information (RFI) during the bidding period that are related to non-CBP requirements.</li> </ul>
FOF PMO PM	<ul style="list-style-type: none"> <li>• Answers the RFIs during the bidding period that are related to CBP requirements.</li> <li>• Notifies CBP stakeholders of the following items related to the CFO's construction contract award:                             <ul style="list-style-type: none"> <li>• Bidding/negotiating update.</li> <li>• Contract award update.</li> <li>• Construction phase kick-off meeting.</li> <li>• Construction schedule/milestones.</li> <li>• Site visit(s)/inspection(s).</li> </ul> </li> </ul>

2 H. Construction Phase

Role	Responsibility
General Contractor	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>
A/E	<ul style="list-style-type: none"> <li>• Reviews project related submittals.</li> <li>• Responds to RFIs related to non-CBP requirements.</li> </ul>
CFO	<ul style="list-style-type: none"> <li>• Submits requests for any deviations from the approved construction documents for CBP spaces, either built or proposed, to the FOF PMO PM.</li> </ul>



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	<ul style="list-style-type: none"> <li>Provides deviations to the FOF PMO PM for review, direction, and approval. The deviation process for proposed changes is discussed in Chapter 1.</li> </ul>
FOF PMO PM	<ul style="list-style-type: none"> <li>Ensures the general contractor receives a notice to proceed from the CFO prior to start of construction.</li> <li>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.</li> <li>Finalizes free space lease with the CFO and appropriate CBP contracting personnel prior to the start of construction.</li> <li>Reviews project related submittals.</li> <li>Submits project change requests for any CBP user requested deviations or scope changes to the CFO.</li> <li>Responds to the RFIs related to CBP requirements.</li> <li>Schedules site visits during the construction phase with CBP stakeholders.</li> </ul>
OPR	<ul style="list-style-type: none"> <li>Inspects and approves all strong and hardened rooms during construction before final wall installation.</li> </ul>

1 I. Acceptance

Role	Responsibility
General Contractor	<ul style="list-style-type: none"> <li>Notifies the CFO of substantial completion.</li> <li>Generates and addresses open punch-list items.</li> <li>Confirms with CBP stakeholders that punch-list items have been corrected and adds punch-lists items as warranted.</li> <li>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.</li> </ul>
CFO	<ul style="list-style-type: none"> <li>Notifies the FOF PMO PM when the facility is ready for final inspection.</li> </ul>
FOF PMO PM	<ul style="list-style-type: none"> <li>Schedules final inspection with CBP stakeholders for generation of CBP punch-list items (both construction and CBP related issues).</li> <li>Verifies resolution of CBP and general contractor punch-lists items.</li> </ul>
OPR	<ul style="list-style-type: none"> <li>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.</li> </ul>



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Fire Protection Engineer or Authority Having Jurisdiction	<ul style="list-style-type: none"> <li>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.</li> </ul>
---	---

### 1 J. Beneficial Occupancy and Project Close-Out

Role	Responsibility
General Contractor	<ul style="list-style-type: none"> <li>Provides the CFO with all pertinent operations and maintenance (O&amp;M) information/manuals and electronic as-built documentation.</li> <li>Transfers warranties to the CFO.</li> </ul>
A/E	<ul style="list-style-type: none"> <li>Reviews and validates all as-built drawings.</li> </ul>
CFO	<ul style="list-style-type: none"> <li>Submits all the O&amp;M information/manuals and electronic as-built documentation to the FOF PMO PM.</li> </ul>
FOF PMO PM	<ul style="list-style-type: none"> <li>Notifies the FOF PMO Program Implementation Branch (PIB) leasing team of final acceptance.</li> <li>Enters facility data into CBP's facilities database.</li> </ul>

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

#### 4 2.4.2 Post Occupancy

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

### 10 2.5 PROJECT IMPLEMENTATION PROCESS – CENTRALIZED EXAMINATION STATIONS

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

13 The design of a CES shall comply with the solicitation package criteria and the requirements in this Standard.  
 14 The OFO may specify space requirements for a particular location based on anticipated volumes, entries, and  
 15 threat assessments. Therefore, CBP should be given the opportunity to build-out a representative POR that  
 16 meets the OFO's operational needs.





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1 Upon tentative selection by CBP, the CES operator shall coordinate specific requirements regarding non-  
2 intrusive inspection (NII), physical security, agriculture inspections, data and voice requirements, and support  
3 spaces, with the specific CBP program offices. Coordination shall be conducted through the FOF PMO PM.

### 4 **2.6 PROJECT IMPLEMENTATION PROCESS – OTHER CARGO FACILITIES**

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

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

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

### 14 **2.7 FUNDING RESPONSIBILITY**

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

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

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

- 27 • Water, gas, electricity, and refuse collection.
- 28 • Telephone and data connectivity.
- 29 • Security monitoring.
- 30 • Antennas.
- 31 • Extra utility fees for overtime use.

32  
33 The federal inspection services (FIS) are furnished by the government at no cost to the CFO, with certain  
34 exceptions.

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



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1 **Table 2-2 Funding Responsibility for CBP Cargo Facilities and Equipment**

SCOPE ITEM	FUNDING RESPONSIBILITY OPERATOR/PORT AUTHORITY		
	ACQUISITION	INSTALLATION	MAINTENANCE & REPAIR
Building(s) and Systems	CFO	CFO	CFO
NII Equipment	CBP/CFO*	CBP/CFO*	CBP/CFO*
IT Equipment	CBP/CFO*	CBP/CFO*	CBP/CFO*
IT Infrastructure Buildout	CFO	CFO	CFO
Casework	CFO	CFO	CFO
Fixed Furniture and Cubicles	CFO	CFO	CFO
Loose Furniture	CFO	CFO	CFO
Shelving	CFO	CFO	CFO
Enforcement Computers	CBP/CFO*	CBP/CFO*	CBP/CFO*
Physical and Electronic Security	CFO	CFO	CFO
Other Equipment	CBP/CFO*	CBP/CFO*	CFO/CBP CBP/CFO*
CBP Software	CBP	CBP	CBP

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

5 **2.8 PROJECT PLANNING AND PROGRAMMING**

6 **2.8.1 Planning Considerations**

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

11 **A. Site Planning**

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

15 **B. Security Planning**

16 Security planning is a crucial part of planning a cargo facility. The goal for security planning at a cargo  
 17 facility is to protect CBP personnel, facilities, and property. Security site and building planning employ both  
 18 passive and active elements. Passive elements may include setbacks, non-straight drive aisles, strategic  
 19 placement of buildings and site features, hardened construction, and sightlines. Active elements may  
 20 include video surveillance, operable gates, electronic key control, and intruder detection systems. The  
 21 physical security measures required in this Standard are intended to be used in conjunction with the



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1 established operating policies, procedures and practices of CBP. Site security considerations are discussed  
2 in Chapter 4. General physical security planning is discussed in detail in Chapter 21. The OPR SMD  
3 specialist will confirm all security solutions. Access to areas within the CBP perimeter are determined and  
4 controlled by CBP.

### 5 C. Expansion

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

## 13 2.8.2 Programming Considerations

### 14 A. Space Programming

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

### 20 B. Space Requirements Matrix

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

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

### 27 C. Room Data Sheets

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

### 31 D. Space Measurement

32 The minimum area requirements provided in this Standard are for planning purposes and represent the  
33 usable area required within the room. The actual space may vary by a small amount to allow for minor  
34 column protrusions, chases, or other construction features that can affect the precise configuration and  
35 resultant area of the space.



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### 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.

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# ENERGY AND SUSTAINABILITY

## Cargo Facilities Design Standard 2019 (Draft)



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**CHAPTER 3 - RESERVED FOR FUTURE**

**3.1 INTRODUCTION**

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# SITE LAYOUT

## Cargo Facilities Design Standard 2019 (Draft)



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## 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



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1 an access control device, approved by the local CBP. To ensure the safety of CBP Officers, the route to access  
2 the parking are shall be well-lighted, a reasonable distance to the facility, and approved by CBP officials. Remote  
3 or off-site parking requiring CBP Officers to use shuttle transportation is not acceptable; CBP officers may need  
4 to move in and out of a facility several times during a typical day or be required to work at night. Remote parking  
5 can adversely affect operational efficiency. Coordination with the Office of Field Operations (OFO) is required  
6 to determine the specific number and location of spaces. Final determination is provided in the program of  
7 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/Es) 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.



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## 1 5.1.2 Cargo Facility Overview

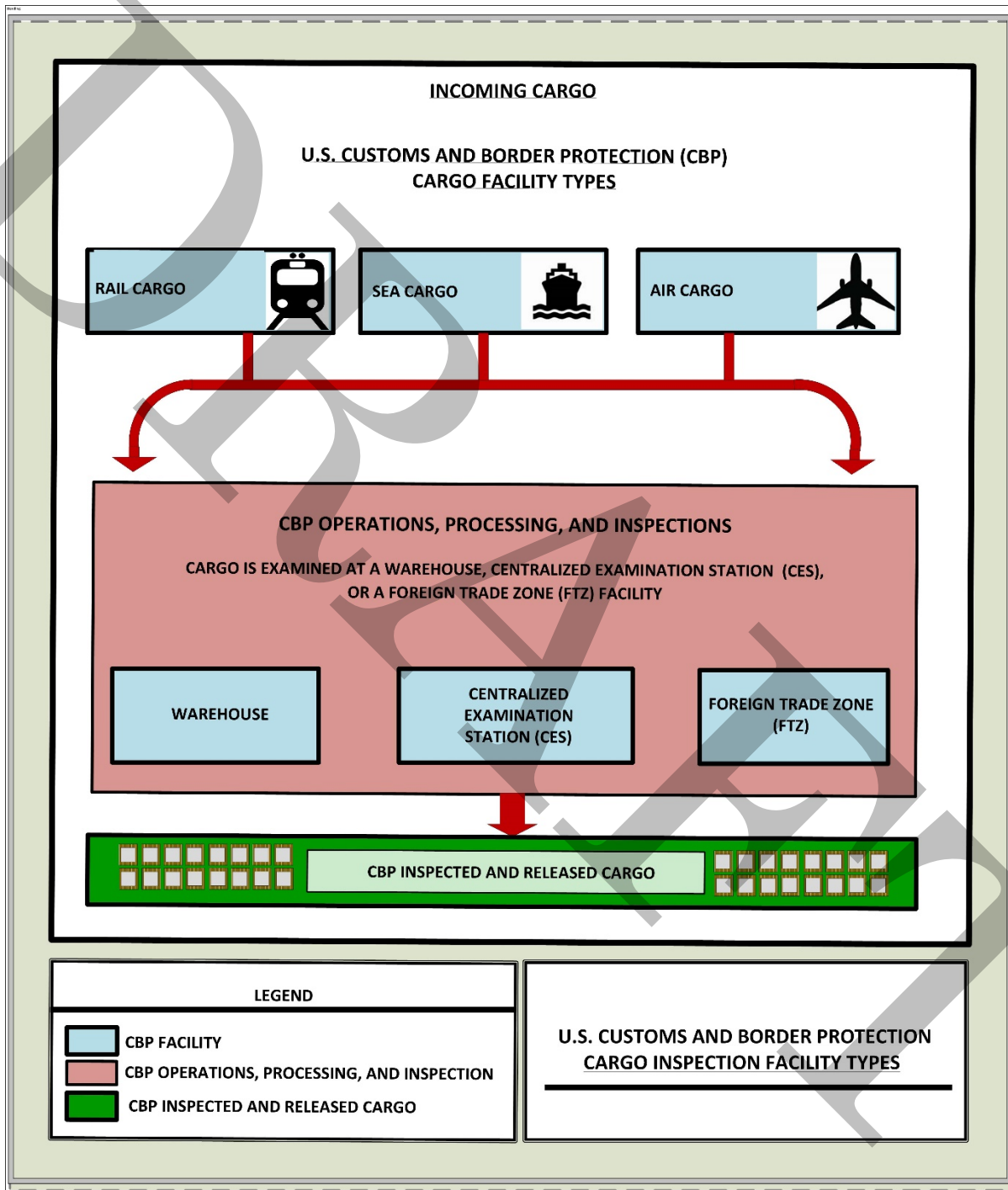


Figure 5-1. Typical Cargo Facility Layout



## 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.



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### 1 5.2.6 Foreign Trade Zone

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

### 6 5.2.7 Intermodal Yard Facilities

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

### 13 5.2.8 Land (Vehicular) Cargo

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

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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/Es) 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.



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

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

### 7 **6.2.4 Operational Support Space**

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

### 13 **6.2.5 Security Features**

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

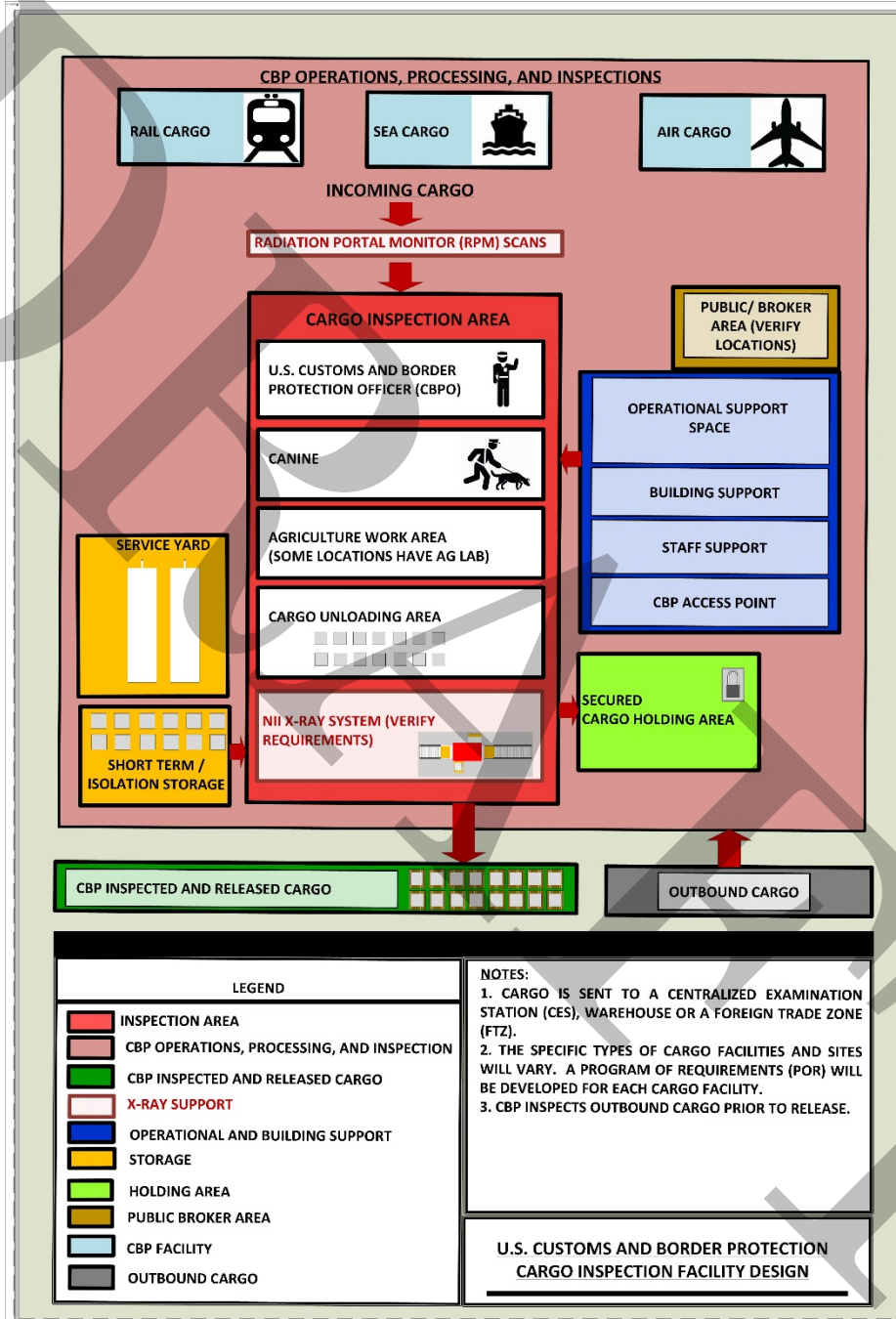
### 19 **6.2.6 Seized Property/Isolation Storage**

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

23



1 6.2.7 Cargo Inspection Facility Layout



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Figure 6-1. Cargo Inspection Facility Layout




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**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**

 U.S. Customs and Border Protection			
<b>Table of Space Requirements: Cargo Inspection Facility</b>			
<b>Room Code</b>	<b>Space Name</b>	<b>Unit of Measure</b>	<b>NASF*Per UM</b>
<b>1.0 Inspection Area</b>			
CRG-01-01	Secondary Inspection Area	Area	1480
CRG-01-02	Agriculture Lab	Each	150 (min)
CRG-01-03	Agriculture Lab Disposal Room	Each	60 (min)
CRG-01-04	Tool Storage Room	Each	40
CRG-01-05	Fraud/Forensic Laboratory	Each	120
CRG-01-06	Seizure Processing Area	Area	150
CRG-01-07	Temporary Seized Property Storage Vault	Each	80
CRG-01-08	Examination and Physical Inspection Area	Area	2,240
CRG-01-12	Enforcement Tool Room	Each	150
CRG-01-13	Personnel Protective Equipment Storage	Each	150
CRG-01-14	APHIS/VS/ Bird Holding	Each	Varies
	<i>Circulation</i>	<i>Total Inspection Support Space</i>	<i>25%</i>
<b>2.0 Operational Support</b>			
CRG-02-01	Public/Broker Waiting Area	Area	125
CRG-02-02	Public/Broker Reception Workstation	Workstation	24-64
CRG-02-03	Port Director's Office	Person	225
CRG-02-04	Assistant Port Director's Office	Person	175
CRG-02-05	Chief's Office	Person	150
CRG-02-06	Supervisor's Office	Person	150
CRG-02-07	Support Staff Workstation	Workstation	64
CRG-02-07	CBP Officer Workstation	Workstation	64
CRG-02-08	CBP Officer Work Area	Workstation	64
CRG-02-07	Canine Officer Workstation	Workstation	64
CRG-02-09	Supply/Storage Room	Room	100 (min)
CRG-02-10	Conference Room - Muster / Training	Room	300
CRG-02-11	Conference Room - Small	Room	200
CRG-02-12	Document Handling Room	Room	100 (min)
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)



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<b>Table of Space Requirements: Cargo Inspection Facility</b>			
<b>Room Code</b>	<b>Space Name</b>	<b>Unit of Measure</b>	<b>NASF*Per UM</b>
CRG-02-07	Call Center	Workstation	64
	<i>Circulation</i>	<i>Total Operational Support Space</i>	<i>25%</i>
<b>3.0 Staff Support</b>			
CRG-03-01	Staff Break Room	Room	240 (min)
CRG-03-02	Male Locker Room	Lockers/ Fixtures/ Showers	Varies
CRG-03-03	Female Locker Room	Lockers/ Fixtures/ Showers	Varies
CRG-03-04	CBP Staff Restroom	Fixtures	60 (min)
CRG-03-05	Lactation Support Room	Room	60
CRG-03-06	Public Restroom	Fixtures	60 (min)
CRG-03-07	Weapons Secure Storage	Room	100
CRG-03-08	Day Kennel	Run	300
CRG-03-09	Canine Storage	Room	80
CRG-03-10	Canine Team Area	Room	150
CRG-03-11	Laundry Room	Washer/ Dyer	Varies (80 min)
	<i>Circulation</i>	<i>Total Staff Support Space</i>	<i>25%</i>
<b>4.0 Building Support</b>			
-	Freight Elevator	Each	
CRG-04-01	Emergency Generator	Each	200 SF
CRG-04-02	Mechanical Room	Each	Varies
CRG-04-03	Janitor's Room	Each	40
-	Service Yard	Service Containers	Varies
	<i>Circulation</i>	<i>Total Building Support Space</i>	<i>25%</i>

1 Notes: NSF = Net Square Feet

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

4 **6.4 FUNCTIONAL AREAS**

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

9 **6.5 INSPECTION AREAS**

10 To facilitate the processing of cargo, the CFO shall provide appropriately sized and designed inspection,  
 11 processing, and hold areas at the cargo inspection facility for secondary/intensive inspections. The CSA shall be  
 12 physically secure to prevent unauthorized access. The processing area may include a canine inspection area, X-



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1 ray screening area, fraud/forensic examination area, and an agriculture inspection and quarantine area. Canine  
2 inspection is generally conducted at container locations. Seized property shall be processed and temporarily  
3 detained, per CBP policy.

### 4 **6.5.1 Examination and Physical Inspection Area**

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

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

### 10 **6.5.2 Secondary Inspection Area**

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

### 14 **6.5.3 Agriculture Laboratory**

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

### 24 **6.5.4 Agriculture Lab Disposal Room**

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

### 29 **6.5.5 Tool Storage Room**

30 The tool storage room is used by CBP officers within the secondary inspection area. The tool storage room does  
31 not have to be a separate enclosed space if there is adequate floor area in the secondary inspection area for this  
32 purpose. This room must have a lockable equipment cabinet and be located within the secondary inspection  
33 area.



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### 1 6.5.6 Fraud/Forensic Laboratory

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

### 5 6.5.7 Seizure Processing Area

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

### 16 6.5.8 Temporary Seized Property Storage

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

### 24 6.5.9 Enforcement Tool Room

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

### 29 6.5.10 Personal Protective Equipment Storage

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

35 Regardless of room size, 18-inch-deep, heavy-duty, adjustable metal shelving positioned to maximize storage  
36 (bolted to wall or floor) is required as specified by CBP.





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### 1 6.5.11 APHIS/VS/Bird Holding

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

## 9 6.6 OPERATIONAL SUPPORT AREAS

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

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

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

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

### 23 6.6.1 Public/Broker Waiting Area

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

### 25 6.6.2 Public/Broker Reception Workstation

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

### 29 6.6.3 Port Director's Office

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



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### 1 6.6.4 Assistant Port Director's Office

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

### 6 6.6.5 Chief CBP Officer's Office

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

### 11 6.6.6 Supervisor's Office

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

### 16 6.6.7 Support Staff Workstation

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

### 20 6.6.8 CBP Officer Workstation

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

### 22 6.6.9 CBP Officer Work Area

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

### 25 6.6.10 Canine Officer Workstation

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

### 29 6.6.11 Supply/Storage Room

30 This space is used to store supplies, office equipment, active files, interim records, and other miscellaneous  
31 items required for CBP operations.



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### 1 6.6.12 Conference Room – Muster/Training

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

### 6 6.6.13 Conference Room – Small

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

### 9 6.6.14 Document Handling Room

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

### 13 6.6.15 Local Area Network Room

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

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

### 23 6.6.16 Supplemental Local Area Network Room

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

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

### 31 6.6.17 Intermediate Distribution Frame Room

32 The intermediate distribution frame (IDF) room, separate from the LAN, is required at all ports where cable  
33 runs from the LAN exceed 300 feet. Data processing and retrieval is less reliable where long distances exist  
34 between the LAN and workstation terminals. The IDFs provide an intermediate access point to strengthen the  
35 data and communications service to remote portions of a facility. All necessary cabling and conduit must be



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1 provided to support the equipment furnished and installed by the government. The IDF will comply with the  
2 current CBP SPPH.

### 3 **6.6.18 Call Center**

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

## 6 **6.7 STAFF SUPPORT AREAS**

7 The following basic facilities shall be provided to support CBP personnel in their duties.

### 8 **6.7.1 Staff Break Room**

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

### 16 **6.7.2 Men's Locker Room and Women's Locker Room**

17 The locker room space houses the lockers for the officers. The locker rooms shall have direct access to the staff  
18 showers and have an entry from a corridor or other staff support space. The locker rooms shall be located near  
19 the main staff entry point to the building.

### 20 **6.7.3 Staff Shower (Men and Women)**

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

### 23 **6.7.4 Staff Restrooms (Men and Women)**

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

### 27 **6.7.5 Lactation Support Room**

28 The lactation support room is provided for CBP employees who are nursing mothers to express breast milk for  
29 their nursing child for up to one year after the child's birth. This activity is allowed during a reasonable  
30 employee break time; thus, lactation support shall be close to the CBP employee break room and staff toilets.  
31 The space and fixed equipment within shall be ABAAS-compliant. This space is provided in compliance with  
32 CBP Directive No. 51711-004, Lactation Support Program (January 25, 2011).



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### 1 6.7.6 Public Restroom

2 Public restrooms shall be located in the public waiting area with entrance doors clearly visible from the officer  
3 work area. Restrooms shall be accessible in compliance with ABAAS.

### 4 6.7.7 Weapons Secure Storage

5 The weapons secure storage room is used for the storage of CBP weapons and paraphernalia for the use and  
6 carrying of weapons.

### 7 6.7.8 Day Kennel

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

### 13 6.7.9 Canine Storage

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

### 16 6.7.10 Canine Team Area

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

### 23 6.7.11 Laundry Room

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

## 29 6.8 BUILDING SUPPORT

30 Cargo inspection facility buildings require typical building systems to operate efficiently and support CBP  
31 operations.

32 The CFO shall provide the maintenance and janitorial services necessary to assure that the building systems  
33 and facility, including all government offices and support spaces, are maintained to provide a clean, safe, and  
34 fully operable environment for CBP personnel.



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1 Scheduled maintenance and janitorial work shall be coordinated with CBP to preclude interfering with CBP  
2 operations or compromising security. All maintenance and cleaning personnel with access to the CBP area shall  
3 be cleared by CBP. CBP shall be present during all maintenance and cleaning operations required during non-  
4 operational hours.

### 5 **6.8.1 Freight Elevator**

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

### 11 **6.8.2 Emergency Generator**

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

### 19 **6.8.3 Mechanical Room**

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

### 24 **6.8.4 Janitor Closet**

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

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

### 30 **6.8.5 Service Yard**

31 CBP requires that cargo inspection facilities in some locations provide a service yard for parking two  
32 containers.

33

34

# CENTRALIZED EXAMINATION STATION

Cargo Facilities Design Standard  
2019 (Draft)



**U.S. Customs and  
Border Protection**



## 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/Es) 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.





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### 1 7.2.3 Cargo Unloading Area

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

### 4 7.2.4 Inspection Area

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

7 CBP officers perform examinations and physical inspections at cargo induction points using non-intrusive  
8 inspections (NII) units, canine enforcement units, and agriculture work areas. Inspection areas shall be located  
9 reasonably close to cargo holding areas and CBP access points. At high traffic locations with multiple loading  
10 areas and/or warehouses, CBP requires a staging area within or near each area. Space shall also be designated  
11 for detention of suspicious cargo for further CBP processing. CBP prefers that sufficient space, adjacent to the  
12 bay doors, be provided to accommodate quick and simultaneous cargo examination from a number of containers.

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

### 14 7.2.5 Operational Support Space

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

### 21 7.2.6 Security Features

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

### 27 7.2.7 Container Storage

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

### 30 7.2.8 Short Term/Isolation Storage

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

33



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**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**

U.S. Customs and Border Protection			
Table of Space Requirements: Centralized Examination Station			
Room Code	Space Name	Unit of Measure	NASF*Per UM
<b>1.0 Inspection Area</b>			
CRG-01-01	Secondary Inspection Area	Area	300
CRG-01-08	Examination and Physical Inspection Area	Area	2,240
CRG-01-09	Cargo Release Area	Area	1,000
CRG-01-10	Unreleased Cargo Holding Area	Area	1,000
CRG-01-11	Cargo Detention Area	Area	1,000
CRG-01-13	Personnel Protective Equipment Storage	Each	150
	<i>Circulation</i>	<i>Total Inspection Support Space</i>	<i>25%</i>
<b>2.0 Operational Support</b>			
CRG-02-08	CBP Officer Work Area	Workstation	64
CRG-02-07	CBP Officer Workstation	Workstation	64
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)
	<i>Circulation</i>	<i>Total Operational Support Space</i>	<i>25%</i>
<b>3.0 Staff Support</b>			
CRG-03-04	CBP Staff Restroom	Fixtures	60 (min)
CRG-03-01	Staff Break Room	Room	240 (min)
	<i>Circulation</i>	<i>Total Staff Support Space</i>	<i>25%</i>
<b>4.0 Building Support</b>			
CRG-04-01	Emergency Generator	Each	200 SF
CRG-04-02	Mechanical Room	Each	Varies
-	Service Yard	Service Containers	Varies
	<i>Circulation</i>	<i>Total Building Support Space</i>	<i>25%</i>

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.



## U.S. Customs and Border Protection

### 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.



**U.S. Customs and  
Border Protection**

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# CARGO WHAREHOUSE

Cargo Facilities Design Standard  
2019 (Draft)



U.S. Customs and  
Border Protection



## 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 (ABAAS) for federally occupied facilities to accommodate CBP personnel and/or brokers requiring accessible means of egress and circulation.



## U.S. Customs and Border Protection

### 1 8.2.3 Inspection Area

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

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

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

### 10 8.2.4 Operational Support Space

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

### 16 8.2.5 Security Features

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

### 22 8.2.6 Container Storage

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

### 26 8.2.7 Seized Property/Isolation Storage

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

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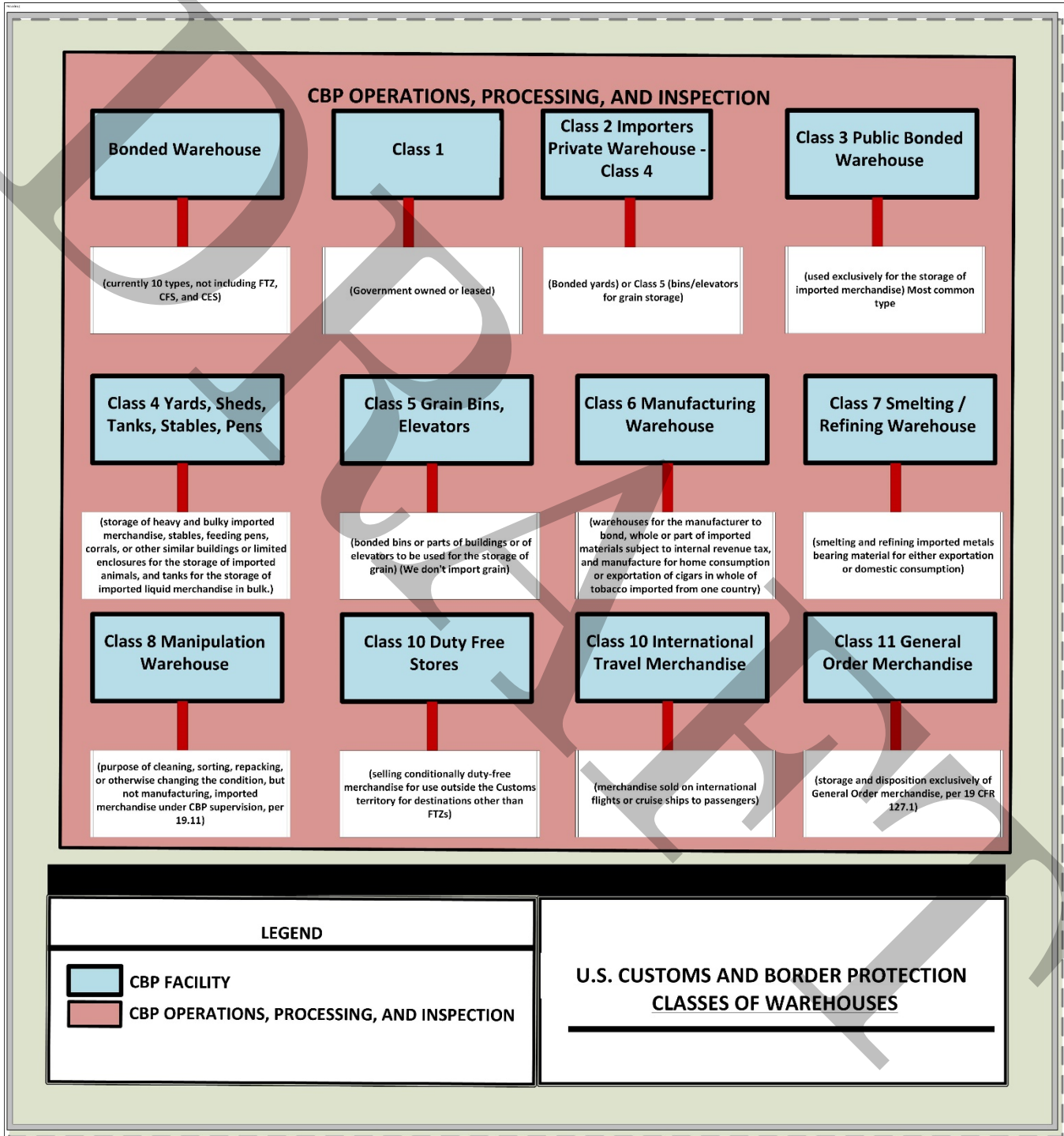
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**U.S. Customs and Border Protection**

1 **8.2.8 Classes of Warehouses**



2 **Figure 8-1. Classes of Warehouses**





**U.S. Customs and Border Protection**

**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**

U.S. Customs and Border Protection			
Table of Space Requirements: Cargo Warehouse			
Room Code	Space Name	Unit of Measure	NASF*Per UM
<b>1.0 Inspection Area</b>			
CRG-01-01	Secondary Inspection Area	Area	300
CRG-01-08	Examination and Physical Inspection Area	Area	2,240
CRG-01-02	Agriculture Lab	Each	120 (min)
CRG-01-03	Agriculture Lab Disposal Room	Each	60 (min)
CRG-01-04	Tool Storage Room	Each	40
CRG-01-11	Cargo Detention Area	Area	1,000
CRG-01-13	Personnel Protective Equipment Storage	Each	150
	<i>Circulation</i>	<i>Total Inspection Support Space</i>	<i>25%</i>
<b>2.0 Operational Support</b>			
CRG-02-08	CBP Officer Work Area	Workstation	80
CRG-02-07	CBP Officer Workstation	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)
	<i>Circulation</i>	<i>Total Operational Support Space</i>	<i>25%</i>
<b>3.0 Staff Support</b>			
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
	<i>Circulation</i>	<i>Total Staff Support Space</i>	<i>25%</i>
<b>4.0 Building Support</b>			
CRG-04-01	Emergency Generator	Each	200 SF
CRG-04-02	Mechanical Room	Each	Varies
CRG-04-04	Utility Yard	Area	Varies
	<i>Circulation</i>	<i>Total Building Support Space</i>	<i>25%</i>

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.



## U.S. Customs and Border Protection

### 1 8.4 FUNCTIONAL AREAS

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

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# AIR CARGO

## Cargo Facilities Design Standard

2019 (Draft)



**U.S. Customs and  
Border Protection**



## 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.



## U.S. Customs and Border Protection

### 1 9.2.3 Inspection Area

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

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

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

### 10 9.2.4 Operational Support Space

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

### 16 9.2.5 Security Features

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

### 22 9.2.6 Seized Property/Isolation Storage

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

## 26 9.3 SPACE REQUIREMENTS MATRIX

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

33 When there are dozens of warehouses/industry trade locations (e.g., Miami) where planes block and unload/load  
34 cargo within each warehouse or area, the CFO shall provide a staging area for CBP inspections.

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**U.S. Customs and Border Protection**

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**Table 9-1. Air Cargo Facility Space Requirements Matrix**

U.S. Customs and Border Protection			
<b>Table of Space Requirements: Air Cargo</b>			
<b>Room Code</b>	<b>Space Name</b>	<b>Unit of Measure</b>	<b>NASF*Per UM</b>
<b>1.0 Inspection Area</b>			
CRG-01-08	Examination and Physical Inspection Area	Area	2,240
CRG-01-02	Agriculture Lab	Each	120 (min)
CRG-01-03	Agriculture Lab Disposal Room	Each	60 (min)
CRG-01-12	Enforcement Tool Room	Each	150
CRG-01-07	Temporary Seized Property Storage Vault	Each	80
CRG-01-11	Cargo Detention Area	Area	1,000
CRG-01-13	Personnel Protective Equipment Storage	Each	150
	<i>Circulation</i>	<i>Total Inspection Support Space</i>	<i>25%</i>
<b>2.0 Operational Support</b>			
CRG-02-08	CBP Officer Work Area	Workstation	80
CRG-02-07	CBP Officer Workstation	Workstation	80
CRG-02-01	Public/Broker Waiting Area	Area	125
CRG-02-02	Public/Broker Reception Workstation	Workstation	80
CRG-02-06	Supervisor's Office	Person	150
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)
CRG-02-09	Supply/Storage Room	Room	100 (min)
	<i>Circulation</i>	<i>Total Operational Support Space</i>	<i>25%</i>
<b>3.0 Staff Support</b>			
CRG-03-04	CBP Staff Restroom	Fixtures	60 (min)
CRG-03-02	Male Locker Room	Lockers/ Fixtures/ Showers	Varies
CRG-03-03	Female Locker Room	Lockers/ Fixtures/ Showers	Varies
CRG-03-05	Lactation Support Room	Room	60
CRG-03-01	Staff Break Room	Room	240 (min)
CRG-03-08	Day Kennel	Run	300
	<i>Circulation</i>	<i>Total Staff Support Space</i>	<i>25%</i>

2 Notes: NSF = Net Square Feet

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

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## U.S. Customs and Border Protection

### 1 9.4 FUNCTIONAL AREAS

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

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# SEA CARGO

## Cargo Facilities Design Standard

2019 (Draft)



**U.S. Customs and  
Border Protection**

**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/Es) 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.



## U.S. Customs and Border Protection

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

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

### 7 **10.2.4 Operational Support Space**

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

### 13 **10.2.5 Security Features**

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

### 19 **10.2.6 Seized Property/Isolation Storage**

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

## 23 **10.3 SPACE REQUIREMENTS MATRIX**

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

30 When there are multiple demands for warehouses/industry trade locations, vessels remain at bay until the dock  
31 is available to unload/load cargo at each location.

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**Table 10-1. Sea Cargo Facility Space Requirements Matrix**

 <b>U.S. Customs and Border Protection</b>			
<b>Table of Space Requirements: Sea Cargo</b>			
<b>Room Code</b>	<b>Space Name</b>	<b>Unit of Measure</b>	<b>NASF*Per UM</b>
<b>1.0 Inspection Area</b>			
CRG-01-08	Examination and Physical Inspection Area	Area	2,240
CRG-01-02	Agriculture Lab	Each	120 (min)
CRG-01-03	Agriculture Lab Disposal Room	Each	60 (min)
CRG-01-12	Enforcement Tool Room	Each	150
CRG-01-07	Temporary Seized Property Storage Vault	Each	80
CRG-01-11	Cargo Detention Area	Area	1,000
CRG-01-13	Personnel Protective Equipment Storage	Each	150
	<i>Circulation</i>	<i>Total Inspection Support Space</i>	<i>25%</i>
<b>2.0 Operational Support</b>			
CRG-02-08	CBP Officer Work Area	Workstation	80
CRG-02-07	CBP Officer Workstation	Workstation	80
CRG-02-01	Public/Broker Waiting Area	Area	125
CRG-02-02	Public/ Broker Reception Workstation	Workstation	80
CRG-02-06	Supervisor's Office	Person	150
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)
CRG-02-09	Supply/Storage Room	Room	100 (min)
	<i>Circulation</i>	<i>Total Operational Support Space</i>	<i>25%</i>
<b>3.0 Staff Support</b>			
CRG-03-04	CBP Staff Restroom	Fixtures	60 (min)
CRG-03-02	Male Locker Room	Lockers/ Fixtures/ Showers	Varies
CRG-03-03	Female Locker Room	Lockers/ Fixtures/ Showers	Varies
CRG-03-01	Staff Break Room	Room	240 (min)
CRG-03-05	Lactation Support Room	Room	60
CRG-03-08	Day Kennel	Run	300
	<i>Circulation</i>	<i>Total Staff Support Space</i>	<i>25%</i>
<b>Building Support</b>			
-	Service Yard	Service Containers	Varies
	<i>Circulation</i>	<i>Total Building Support Space</i>	<i>25%</i>

2 Notes: NSF = Net Square Feet

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

## 5 10.4 FUNCTIONAL AREAS

6 Adjacencies and process flow within an area are as important as the adjacencies and process flow between  
7 areas. Specific requirements for all the rooms listed may be found in Chapter 22, Room Data Sheets. Numbers  
8 associated with rooms described above are the room code assigned in the room data sheets. Refer to Chapter 6,



## U.S. Customs and Border Protection

- 1 Cargo Inspection Facility, and Chapter 7, Centralized Examination Station, for descriptions of inspection
- 2 areas, operational support areas, staff support areas, and building support spaces.
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# FOREIGN TRADE ZONE

## Cargo Facilities Design Standard

2019 (Draft)



**U.S. Customs and  
Border Protection**



## 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 (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 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.





## U.S. Customs and Border Protection

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

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

### 7 **11.2.4 Operational Support Space**

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

### 13 **11.2.5 Security Features**

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

### 19 **11.2.6 Seized Property/Isolation Storage**

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

## 23 **11.3 SPACE REQUIREMENTS MATRIX**

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

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**Table 11-1. Foreign Trade Zone Space Requirements Matrix**

U.S. Customs and Border Protection			
Table of Space Requirements: Foreign Trade Zone			
Room Code	Space Name	Unit of Measure	NASF*Per UM
<b>1.0 Inspection Area</b>			
CRG-01-08	Examination and Physical Inspection Area	Area	2,240
CRG-01-02	Agriculture Lab	Each	120 (min)
CRG-01-03	Agriculture Lab Disposal Room	Each	60 (min)
CRG-01-12	Enforcement Tool Room	Each	150
CRG-01-07	Temporary Seized Property Storage Vault	Each	80
CRG-01-11	Cargo Detention Area	Area	1,000
CRG-01-13	Personnel Protective Equipment Storage	Each	150
	<i>Circulation</i>	<i>Total Inspection Support Space</i>	<i>25%</i>
<b>2.0 Operational Support</b>			
CRG-02-08	CBP Officer Work Area	Workstation	80
CRG-02-07	CBP Officer Workstation	Workstation	80
CRG-02-01	Public/Broker Waiting Area	Area	125
CRG-02-02	Public/ Broker Reception Workstation	Workstation	80
CRG-02-06	Supervisor's Office	Person	150
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)
CRG-02-09	Supply/Storage Room	Room	100 (min)
	<i>Circulation</i>	<i>Total Operational Support Space</i>	<i>25%</i>
<b>3.0 Staff Support</b>			
CRG-03-04	CBP Staff Restroom	Fixtures	60 (min)
CRG-03-02	Male Locker Room	Lockers/ Fixtures/ Showers	Varies
CRG-03-03	Female Locker Room	Lockers/ Fixtures/ Showers	Varies
CRG-03-05	Lactation Support Room	Room	60
CRG-03-01	Staff Break Room	Room	240 (min)
CRG-03-08	Day Kennel	Run	300
	<i>Circulation</i>	<i>Total Staff Support Space</i>	<i>25%</i>
<b>Building Support</b>			
-	Service Yard	Service Containers	Varies
	<i>Circulation</i>	<i>Total Building Support Space</i>	<i>25%</i>

2 Notes: NSF = Net Square Feet

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

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## U.S. Customs and Border Protection

### 1 11.4 FUNCTIONAL AREAS

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

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# INTERMODAL YARD

## Cargo Facilities Design Standard

2019 (Draft)



**U.S. Customs and  
Border Protection**



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

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

### 7 **12.2.4 Operational Support Space**

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

### 13 **12.2.5 Security Features**

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

### 19 **12.2.6 Seized Property/Isolation Storage**

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

## 22 **12.3 SPACE REQUIREMENTS MATRIX**

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

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

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**Table 12-1. Intermodal Yard Facility Space Requirements Matrix**

U.S. Customs and Border Protection			
<b>Table of Space Requirements: Intermodal Facility</b>			
<b>Room Code</b>	<b>Space Name</b>	<b>Unit of Measure</b>	<b>NASF*Per UM</b>
<b>1.0 Inspection Area</b>			
CRG-01-08	Examination and Physical Inspection Area	Area	2,240
CRG-01-02	Agriculture Lab	Each	120 (min)
CRG-01-03	Agriculture Lab Disposal Room	Each	60 (min)
CRG-01-12	Enforcement Tool Room	Each	150
CRG-01-07	Temporary Seized Property Storage Vault	Each	80
CRG-01-11	Cargo Detention Area	Area	1,000
CRG-01-13	Personnel Protective Equipment Storage	Each	150
	<i>Circulation</i>	<i>Total Inspection Support Space</i>	<i>25%</i>
<b>2.0 Operational Support</b>			
CRG-02-08	CBP Officer Work Area	Workstation	80
CRG-02-07	CBP Officer Workstation	Workstation	80
CRG-02-01	Public/Broker Waiting Area	Area	125
CRG-02-02	Public/ Broker Reception Workstation	Workstation	80
CRG-02-06	Supervisor's Office	Person	150
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)
CRG-02-09	Supply/Storage Room	Room	100 (min)
	<i>Circulation</i>	<i>Total Operational Support Space</i>	<i>25%</i>
<b>3.0 Staff Support</b>			
CRG-03-04	CBP Staff Restroom	Fixtures	60 (min)
CRG-03-02	Male Locker Room	Lockers/ Fixtures/ Showers	Varies
CRG-03-03	Female Locker Room	Lockers/ Fixtures/ Showers	Varies
CRG-03-05	Lactation Support Room	Room	60
CRG-03-01	Staff Break Room	Room	240 (min)
CRG-03-08	Day Kennel	Run	300
	<i>Circulation</i>	<i>Total Staff Support Space</i>	<i>25%</i>
<b>Building Support</b>			
-	Service Yard	Service Containers	Varies
	<i>Circulation</i>	<i>Total Building Support Space</i>	<i>25%</i>

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Notes: NSF = Net Square Feet

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

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### 1 12.4 FUNCTIONAL AREAS

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

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# CIVIL AND LANDSCAPE REQUIREMENTS

Cargo Facilities Design Standard  
2019 (Draft)



**U.S. Customs and  
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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.



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### 1 A. Traffic Alignment Planning

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

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

### 17 B. Parameters for Roadway Design

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

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

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

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

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

### 32 C. Clearance to Obstructions

33 Nothing shall encroach in the travel way indicated by the solid white or yellow lines, except for yellow traffic  
34 bollards. On all roadways, a minimum clearance shall be provided for vehicles to maneuver, negotiate turns,  
35 and proceed through lanes without the hazard of crossing curbs. On all streets, a minimum clearance of 1.5  
36 feet shall be provided between the curb face and obstructions, such as utility poles, lighting poles, and fire  
37 hydrants. A minimum horizontal clearance of 2 feet shall be provided between the face of the curb and the



## U.S. Customs and Border Protection

1 edge of roadway signs. A minimum vertical clearance of 7 feet from the ground to the bottom of signs or  
2 other roadside obstructions shall be provided.

### 3 **13.2.5 Physical Security**

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

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

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

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

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

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

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

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

34 Where snow and ice are to be expected, gates and other operable devices shall operate when adverse conditions  
35 occur and shall allow for removal of accumulated snow and ice without damage to the barriers and other devices.

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1 Hardscaping is permitted, but shall not include gravel or rocks that could be thrown. Gravel or rocks used for  
2 hardscaping shall weigh 100 lbs. or more on average to discourage throwing.

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

### 5 **13.2.6 Landscape Design**

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

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

#### 16 A. Plant Materials

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

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

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

#### 31 B. Installation

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

#### 34 C. Irrigation

35 Where required by local climatic conditions, permanent, automatically controlled, high-efficiency irrigation  
36 shall be provided in landscaped areas immediately around the cargo facility and at grade-level planters. A



## U.S. Customs and Border Protection

1 certified irrigation study shall be provided by the mechanical, electrical, plumbing (MEP) contractor,  
2 landscape architect, or engineer of record to verify the site requirements and the type of irrigation proposed.  
3 Irrigation controllers shall be located within locked storage rooms. Recycled water shall be used for  
4 irrigation.

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

### 8 D. Hose Bibbs

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

### 12 13.2.7 Weather Related Design Strategies

#### 13 A. Northern Locations

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

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

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





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### 1 B. Southern Locations

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

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

### 14 13.2.8 Existing Conditions

#### 15 A. Geotechnical

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

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

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

#### 28 B. Survey

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

#### 31 C. Archeological

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



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### 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.



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1 The following minimum, maximum, and recommended grades shall be observed:

2 **Table 13-1. Grading**

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

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

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

13 **A. Earthwork**

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

16 **B. Storm Water Management**

17 Consistent with federal law, the storm water runoff rate from the site should be held to its pre-developed  
 18 rate, using on-site detention or retention facilities. The storm water management plan shall comply with  
 19 federal, state, and local regulatory requirements including regional or site-specific water-use agreements.  
 20 Storm water calculations should adhere to state and local agency recommendations. A certified drainage  
 21 study shall be provided by the engineer of record prior to concept approval to verify that the proposed design  
 22 meets the requirements of 42 U.S.C. § 17094.



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1 Strategies to mitigate storm water quantity include minimizing paved impermeable areas, maximizing  
2 pervious areas and areas with plant cover. If necessary, use detention/retention storage facilities, such as  
3 surface ponds or depressions.

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

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

### 8 **13.3.3 Roadway and Paving**

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

#### 14 A. Structural Pavement Design Procedures

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

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

#### 22 B. Roadways

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

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

32 The method used for determining the design thickness of pavement shall conform to the local needs and be  
33 documented in the project's design analysis.



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### 1 C. Parking/Canopy and Inspection Areas

2 Parking areas may be paved with flexible bituminous materials. Under canopies and inspection areas  
3 should be paved with rigid materials for durability. Parking areas, particularly parking stalls, may be paved  
4 with porous pavements to comply with the requirements in the Energy Independence and Security Act of  
5 2007, § 438, 42 U.S.C. § 17094. The proposed material/application shall be maintainable at the facility.

### 6 D. Sidewalks/Curbs/Islands

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

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

### 13 13.3.4 Traffic Control

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

#### 18 A. Traffic Control Devices

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

25 Control devices shall be used consistently and uniformly to achieve maximum effectiveness and insure  
26 steady traffic flow. Details of the standard devices and warrants under many conditions are found in the  
27 Manual on Uniform Traffic Control Devices (MUTCD) or state manual when applicable. The MUTCD (or  
28 state manual when applicable) defines the standards used by road managers nationwide to install and  
29 maintain traffic control devices on all streets and highways. The MUTCD is published by the FHWA under  
30 23 C.F.R. § 655, Subpart F and is the minimum standard.

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

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



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### 1 B. Signage

2 For signage guidelines, see Appendix B, Signage.

### 3 **13.3.5 Markings**

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

### 5 **13.3.6 Site Utilities**

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

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

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

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

### 16 A. Sanitary

17 Sanitary sewers include the service pipe and structures from the building(s) to the available utility stub or  
18 connection point. Cargo facilities at remote locations may be designed with on-site septic sewer systems. In  
19 the design of sanitary sewer systems, contactors shall follow all regulations of the local sanitary sewer  
20 authority. The preferred pipe material for on-site sanitary sewer is polyvinyl chloride (PVC) pipe (schedule  
21 80 for direct burial and schedule 40 for concrete encased pipe). If heavy loads or extremely deep burial are  
22 encountered, the pipe may be installed in a steel casing or changed to cement-lined ductile iron pipe. At  
23 northern border locations, sewer lines shall be located at a depth greater than the frost line.

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

### 27 B. Water

28 Water utilities include the on-site building services for domestic and fire protection purposes. Remote cargo  
29 facilities may be designed with on-site well or cistern systems. Water main sizing shall be done to ensure  
30 adequate flow and pressure under the maximum domestic and fire protection demands. The design of the  
31 water distribution system shall be in accordance with the requirements of the American Water Works  
32 Association (AWWA) standards and Manuals of Water Supply Practices. It shall conform to state and  
33 municipal water supply standards. Where standards disagree, the most stringent shall apply. At northern  
34 border locations, water lines shall be located at a depth greater than the frost line.



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1 The service connections between building and public water lines shall be coordinated with the local water  
2 authority. The service connection shall be placed in a secure enclosure to prevent unauthorized access and  
3 potential contamination.

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

### 8 C. Fire Hydrants/Service

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

### 11 D. Gas

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

### 17 13.3.7 Site Improvements

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

#### 22 A. Perimeter Fencing

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

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

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

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



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1 B. Gates

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

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

6 C. Noise Isolation Walls

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

8 D. Flagpoles

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

11 E. Site Furniture

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

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

17 F. Trash Enclosures

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

21

22

23



# ARCHITECTURE REQUIREMENTS

Cargo Facilities Design Standard  
2019 (Draft)



**U.S. Customs and  
Border Protection**



## 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.



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1 Ceiling heights shall be 9' minimum, except for detention suite spaces, which shall maintain a uniform  
2 height between 9' and 10'. Other spaces, including training, open office areas, and supervisory rooms, may  
3 require a taller ceiling height.

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

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

### 17 B. Aesthetics

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

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

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

### 28 14.2.2 Building Envelope Systems and Materials

#### 29 A. Wall Systems (Exterior Face)

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

34 Brick: Masonry pattern and detailing shall be consistent with adjacent buildings. Face brick shall be ASTM  
35 C216 Type FBS. Cut, exposed, masonry products shall be held to a minimum and shall be located where  
36 they shall have the least impact on the aesthetics of the facility. Clay or shale brick veneer shall be masonry



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- 1 units conforming to ASTM C216, Type FBS. Grade SW shall be used for all brickwork. Brick unit sizes shall  
2 be modular.
- 3 Concrete: Tilt-up or precast panel. Panel may include brick facing or stamped/decorative pattern. Panels  
4 shall be a minimum 6" thick. Tilt-up panels shall use resin type release agent, containing no materials that  
5 could affect bond of subsequent finishes or natural appearance of exposed concrete surfaces. Aggregates  
6 shall conform to ASTM C33/C33M and shall not contain any substance which may be deleteriously reactive  
7 with the alkalis in the cement. Admixtures shall not include calcium chloride. Precast concrete shall have  
8 a minimum 28-day compressive strength of 4000 psi. Reinforcing bars for precast concrete panels shall  
9 conform to ASTM A767/A767M and ASTM A780/A780M for zinc-coated (galvanized) bars.
- 10 Cultured Stone: Masonry veneer pattern and detailing shall be consistent with adjacent buildings. Cultured  
11 stone installation shall follow manufacturer's specifications.
- 12 Ground and Split Face Block: Masonry veneer pattern and detailing shall be consistent with adjacent  
13 buildings.
- 14 Fiber-Cement Board: Fiber-cement board siding shall conform to ASTM C1185/C1186. Finished panels shall  
15 be dimensionally stable. Water absorption on the surfaced side shall not exceed 0.20 percent after 24 hours  
16 of submergence in water. Accessories shall be manufacturer's standard extruded matching color aluminum  
17 moldings.
- 18 Metal Wall Panels: Galvanized metal panels may be corrugated or smooth face type. Fasteners may be  
19 exposed or concealed. All metal panels shall be pre-engineered with insulation and factory-finished. Wall  
20 panels shall comply with performance requirements, conforming to AISI S100, without failure due to  
21 defective manufacture, fabrication, installation, or other defects in construction. Wall panels and accessory  
22 components shall conform to the following standards:
- 23 ● ASTM A1008/A1008M.
  - 24 ● ASTM A123/A123M.
  - 25 ● ASTM A36/A36M.
  - 26 ● ASTM A653/A653M.
  - 27 ● ASTM A463/A463M for aluminum coated steel sheet.
  - 28 ● ASTM A606/A606M.
  - 29 ● ASTM A924/A924M for metallic coated steel sheet.
  - 30 ● ASTM D522 for applied coatings.
- 31 Bullet-resistant metal wall panels shall meet or exceed UL-752, Level 3, and ASTM F1233, Class 3-Level  
32 III for forced entry resistance.
- 33 B. Wall Systems (Substrate)
- 34 Wood framing shall only be used for the smaller cargo facility buildings supported by location and  
35 availability of materials and skilled labor. Lumber shall be Forest Stewardship Council (FSC)-certified.  
36 Framing lumber shall be locally sourced and decay-resistant.



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- 1 Concrete masonry units (CMU) shall be hollow, reinforced, load-bearing units, conforming to ASTM C90,  
2 shall be provided for foundation walls, exterior walls, and shear walls. Slag shall comply with ASTM  
3 C989/C989M; Grade 100.
- 4 Cold formed metal framing shall include top and bottom tracks, bracing, fastenings, and other accessories  
5 needed for installation. Framing members shall have the structural properties indicated. Where physical  
6 structural properties are not indicated, they shall be as necessary to withstand all imposed loads. Design  
7 framing in accordance with AISI SG-673. Installation shall be in accordance with Department of Revenue  
8 (DOR)-approved shop drawings and manufacturer's installation instructions. Framing components shall  
9 comply with ASTM C955 and the following:
- 10 ● Steel Sheet: ASTM A1003/A1003M, structural grade as required by structural performance, Type H,  
11 metallic coated G90.
  - 12 ● Steel Sheet for Vertical Deflection: ASTM A1003/A1003M, ASTM A653/A653M, structural steel as  
13 required by structural performance, zinc coated G90.
  - 14 ● Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths as required by structural  
15 performance, punched, with stiffened flanges.
  - 16 ● Steel Track: Manufacturer's standard U-shaped steel track, of web depths as required by structural  
17 performance, un-punched, with straight flanges.
- 18 C. Wall Systems (Insulation)
- 19 Insulation placed between the steel studs shall be batt or blanket type mineral wool conforming to ASTM  
20 C665, Type II. Insulation for wall cavities shall be rigid board-type insulation. Rigid board-type insulation  
21 shall be either polystyrene conforming to ASTM C578, Type I or II, Grade 2 or polyurethane conforming to  
22 ASTM C591. Masonry veneer facing shall have a minimum 2" rigid insulation in the wall cavity. The drained  
23 cavity between the veneer and the insulation shall be a minimum of 1 ½".
- 24 D. Wall Systems (Vapor Barrier)
- 25 The vapor retarder shall be polyethylene film conforming to ASTM D2103, 6 mil minimum thickness. A  
26 continuous air barrier is needed to control air leakage into, or out of, conditioned spaces. The building  
27 envelope shall include all elements of the facility that are exposed to the outside environment or outside  
28 environmental conditions such as the roof, walls, floors, and compartmentalized unconditioned portions of  
29 the facility, such as garages and negatively pressurized spaces. Builders must permanently seal  
30 penetrations through the air barrier, joints in the air barrier, adjoining construction, and transitions to  
31 different air barrier materials.
- 32 E. Wall Systems (Waterproofing Membrane)
- 33 Below-grade waterproofing shall be applied to the positive pressure side of the exterior wall and shall be  
34 covered by a protection mat to shield the waterproofing membrane from deleterious effects of construction  
35 activities, ultraviolet radiation, or aggressive vegetation.



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### 1 F. Wall Openings

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

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

12 Aluminum storefront doors shall be used for public and staff entry doors only. Swing-type aluminum doors  
13 and storefront frames should be sized and designed to withstand minimum design wind load, and with  
14 resulting design pressure determined in accordance with the International Building Code (IBC). Deflection  
15 shall be limited to not more than 1/175 times the length of the member, with a safety factor of not less than  
16 1.65. The doors need glazing beads, moldings, and trim of not less than 0.050" nominal thickness. Doors  
17 should be complete with frames, framing members, subframes, transoms, adjoining sidelights, adjoining  
18 window wall, trim, and accessories. Windows should be made with insulating glass and thermal break to  
19 achieve no water penetration at a pressure of 8 pounds per square foot of fixed area, and air infiltration not  
20 to exceed 0.06 cubic feet per minute per square foot of fixed area at a test pressure of 6.24 pounds per square  
21 foot. The finish shall be Architectural Class I anodic coating or American Architectural Manufacturers  
22 Association (AAMA) 2605 organic coating.

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

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

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

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

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

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

35 Panic hardware is required for all exterior doors per ANSI/BHMA 156.3 (heavy-duty touch-pad type,  
36 through-bolted mounting). The locations of panic hardware and type shall be coordinated with an Office of  
37 Professional Responsibility (OPR) physical security specialist.



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1 Aluminum curtain walls are permitted where bullet-resistant requirements do not prohibit their use.  
2 Curtain walls shall use a combination of transparent and opaque panels and shall integrate with the  
3 structural, aesthetic, and thermal properties of the general exterior envelope. Contractor shall provide a  
4 mockup of one designated curtain wall system unit for the project to be used for a field test of compliance  
5 with AAMA 503 Method A and Method B.

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

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

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

### 22 G. Roof Systems

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

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

37 Low slope roofs shall have a minimum slope of  $\frac{1}{4}$ " per foot. The roof shall not have any locations allowing  
38 pooling of water. Parapets shall be required as necessary for low-slope roofs. Low slope roofs should have  
39 all roof drainage at the perimeter of the building. Low slope roofs shall be a single ply EPDM rubber  
40 membrane or three-ply modified bituminous membranes. Polyester reinforced cap sheet or walkways shall



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1 be provided on single-ply or modified bitumen roofs where equipment is expected to receive regular service  
2 or high maintenance, and where other service conditions warrant.

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

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

### 14.3 INTERIOR DESIGN - CHARACTER AND MATERIALS

#### 14.3.1 Planning and Design

##### A. Overview

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

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

##### B. Aesthetics

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

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

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

33 Pictures should be plentiful throughout the administrative areas reflecting field operations (including  
34 employees at work).





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1 The use of materials and finishes shall not change drastically between primary and secondary inspection  
2 areas. The path from primary to secondary inspections and exit control shall be viewed as a seamless  
3 process.

### 4 C. Energy Efficiency and Sustainability

5 The interior design of the buildings of a cargo facility shall support the energy efficiency and sustainability  
6 objectives defined in Chapter 1 of this Standard.

### 7 D. Interior Layout and Planning

8 Interior layouts shall incorporate a maximum of flexibility to accommodate future additions, technologies,  
9 and changes to operations. Flexibility shall be achieved through the provision of data/power feeds, use of  
10 open work plans, and concentration of hard-walled rooms.

11 The interior layout of the cargo facility buildings shall enforce a sense of clear organization of different  
12 functions, circulation patterns, and segregation of secure areas. Signage shall only be used to reinforce these  
13 organizational objectives.

14 Daylighting should be maximized and combined with artificial lighting to achieve the requirements set forth  
15 in Chapter 19, Electrical-Power and Lighting, and the room data sheets. Due to the various inspection  
16 activities required operationally at cargo facilities, the lighting criteria provided in these sections shall be  
17 met, at a minimum. Lighting shall also be sufficient to support surveillance methods throughout the facility.  
18 The daylighting design shall also mitigate the effects of glare and heat gain.

19 CBP meeting and office spaces require a degree of noise isolation using sound-absorptive materials and  
20 construction methods. Specific Sound Transmission Class (STC) ratings are provided in the room data  
21 sheets. Acoustical performance shall be verified during the commissioning of the building, such as the  
22 following.

- 23 ● All conference, training, and meeting spaces shall have a minimum STC rating of 45.
- 24 ● All private offices shall have a minimum STC rating of 45.
- 25 ● Kennels shall have a minimum STC rating of 50.

### 26 14.3.2 Systems and Materials

#### 27 A. Interior Construction

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

30 Gypsum board shall comply with ASTM C 1396. Minimum panel thickness shall be 5/8". Provide Type X  
31 panels in fire-rated assemblies. Moisture resistant panels shall be installed at locations subject to moisture.  
32 Abuse-resistant panels are needed for corridors and other areas of likely high circulation use. Joint  
33 treatment shall comply with ASTM C 475. Fasteners shall comply with ASTM C 646. Drywall installation  
34 shall comply with ASTM C 840.



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1 Non-load bearing metal studs and furring shall comply with ASTM C 645; stud gauge shall be as required  
2 by height and loading, but it shall not be less than 25-gauge. Maximum stud spacing is 16" on center and  
3 should have a galvanized finish.

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

14 Concrete block shall be provided for spaces such as public restrooms, which shall be constructed to hardened  
15 standards, but not the medium level of security of violator enforcement spaces. Block shall be hollow brick,  
16 8" depth, complying with ASTM C129, lightweight aggregate (for non-load-bearing walls).

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

### 21 B. Doors, Frames, and Hardware

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

24 Door frame types indicated in the room data sheets:

- 25 HM-1 Interior, 12-gauge hollow metal, fully welded.
- 26 HM-2 Interior, 12-gauge hollow metal, fully welded, with sidelite.
- 27 HM-3 Detention, 12-gauge, fully welded, grouted into CMU.
- 28 HM-3A Detention, 3/32", fully welded, grouted into CMU.
- 29 HM-4 Exterior, 12-gauge hollow metal, fully welded, galvanized.
- 30 HM-5 HM as included with pre-fabricated building.
- 31 AL-1 Exterior aluminum storefront system.
- 32 AL-2 Interior aluminum storefront system.
- 33 SS-1 Exterior, 12-gauge stainless steel, fully welded.
- 34 W-1 Wood frame.
- 35 WS-1 Formed, reinforced and welded steel.

36 Hollow metal frames (HM-1, HM-2, HM-4, HM-5) shall comply with ANSI A250.8/SDI 100. Frames shall be  
37 Level 2, 16-gauge, with continuously welded corners and seamless face joints, factory primed. Anchors and  
38 accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating and plaster guards  
39 and shall be grouted solid.



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- 1 Steel frames for detention rooms (HM-3) shall be 12-gauge steel and grouted into the surrounding wall.
- 2 Door types indicated in the room data sheets:
- 3 A-A Wood, full flush, solid core, 5 layers, 36" x 7'-0" x 1-3/4" typical, natural stain finish
- 4 B-B-01 Hollow metal, full flush, seamless, 36" x 7'-0" x 1-3/4" typical, 0.053" gauge face, painted finish, Level
- 5 A, extra heavy duty.
- 6 B-B-02 Hollow metal, full flush, seamless, oversized, 42" x 80" x 1-3/4", 0.053" gauge face, painted finish,
- 7 Level A, extra heavy duty.
- 8 B-B-03 Hollow metal, full flush, seamless, acoustic-rated, 36" x 7'-0" x 1-3/4" Typical,
- 9 D Detention grade, 12 Ga HM, 2", flush, seamless, 12" sq. vision panel, 180° outswing, 36" x 7'-0" x 2",
- 10 Vision panel of polycarbonate laminate, glass-clad polycarbonate or glass laminate. Provide sliding
- 11 cover over vision panel on ingress side.
- 12 D-03 Detention grade, 12 Ga HM, 1-1/2", half-glass, seamless, 180° outswing, 36" x 7'-0" x 2", Vision panel
- 13 of polycarbonate laminate, glass-clad polycarbonate or glass laminate.
- 14 GL-01 Aluminum storefront, framed full height Low-E insulated glass, 36" min width.
- 15 GL-02 Aluminum storefront, framed partial height, Low-E insulated glass, 36" min width.
- 16 GL-03 Aluminum storefront, frameless full height glass, 36" min width.
- 17 SL-01 Sliding (integral with inspection booth).
- 18 SS-01 Stainless steel, full flush, seamless with 4" x 25" polycarbonate vision panel, 36" x 7'-0" x 1-3/4" with
- 19 4" x 25" polycarbonate vision panel.
- 20 OH-1 Commercial grade overhead, 12' - 16'W x 16'H.
- 21 V-1 Vault: 12-gauge, hollow metal, full flush, seamless, 36" x 7'-0" x 1-3/4" typical.
- 22 FE-1 SD-STD-01.01, Revision G (Amended) (Opaque) 5 min FE.
- 23 Door Specifications:
- 24 General: Provide sidelites in doors where reasonable, based on space requirements, privacy requirements
- 25 and the amount of daylight present. Sidelites shall also be provided where dictated in the room data sheets.
- 26 Hollow metal doors (B-B-01, B-B-02) shall comply with ANSI A250.8/SDI 100. Doors shall be Level 2,
- 27 physical performance Level B, Model 2, factory primed. Anchors and accessories shall be zinc coated.
- 28 Solid core flush wood doors (A-A) shall have staved lumber or particleboard core and shall be Type II flush
- 29 doors for interior use conforming to WWDA I.S.1-A with faces of premium grade hardwood veneer. Fire-
- 30 rated wood doors shall conform to the requirements of UL 10B, ASTM E 152, or NFPA 252 for the class of
- 31 door indicated and shall be provided with hardware reinforcement blocking in compliance with the
- 32 manufacturer's labeling requirements and shall not be mineral material similar to the core. A permanent
- 33 metal label with raised or incised markings shall be attached to indicate the testing agency's name and
- 34 approved hourly fire rating to hinge edge of each door.
- 35 Steel clad doors for detention rooms (D, D-03) shall be constructed of 2" thick, detention grade, 12-gauge
- 36 steel that swings in the direction of egress. These doors shall be equipped with polycarbonate or glass
- 37 laminate 12" x 12" vision panel installed at the standard height for officer checks into the room. Detention
- 38 room doors shall not have a door closer.



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1 Horizontal aluminum mini-blinds or light limiting blinds shall be installed at all interior and exterior  
2 windows in core areas, except windows and storefront in corridors. Blinds shall have 1" wide x 0.1" thick  
3 slats with anti-static, anti-microbial polyester baked enamel finish. Contractor shall provide heavy duty 1"  
4 x 1 ½" steel headrail, and tubular steel bottom rail finished to match slats.

5 Door Hardware Specifications:

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

7 Door lockset hardware types indicated in the room data sheets:

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

29  
30 Door cylinder hardware types indicated in the room data sheets:

- 31
- 32 A-1 Cylinder, keyed individually under a CBP master.
- 33 A-2 Cylinder, keyed individually NOT under a CBP master.
- 34 A-3 Cylinder, keyed under a CBP master, like toilet and physical training rooms.
- 35

36 Door miscellaneous hardware types indicated in the room data sheets:

- 37
- 38 A Door astragal, required at double doors.
- 39 B Automatic door bottom, aka automatic threshold closer.
- 40 C Door coordinator, for double doors.
- 41 D Door stop, wall- or floor-mounted.
- 42 E Door threshold, coordinate with flooring transitions.



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- 1 F Electric strike, 12V or 24V, centrally powered.  
 2 F1 Electric strike, deadbolt lock, 12V or 24V, centrally powered, Fail Secure.  
 3 F2 Electric strike, non-deadbolt lock, 12V or 24V, centrally powered, Fail Secure.  
 4 G High security balanced magnetic alarm switch (BMAS-UL 634 Level 2), required at all perimeter  
 5 doors.  
 6 H Flush bolt, for passive leaf at double doors.  
 7 I Latch protector, required at all out swinging doors.  
 8 J Non-removable hinges (outswing), required at all perimeter and out swinging doors.  
 9 K Automatic door closer, commercial grade, required at all perimeter and card reader doors.  
 10 L Anti-pry strip (inswing), required at all Perimeter doors.  
 11 P Door pull, outside, stainless steel, match other hardware finishes.  
 12 W Full weather-stripping entrance set F1 Strike, E Threshold, G BMAS, J Hinges, K Closer. L Anti-  
 13 pry.  
 14 X Power transfer hinge.

### 15 C. Windows and Glazing

#### 16 Glazing Specifications:

- 17 ● Bullet resistant glazing shall be specified and installed to meet the requirements of the SPPH. Bullet-  
 18 resistant glazing shall meet or exceed UL-752 Level 3 for bullet resistance and ASTM F1233 Class 3  
 19 Level III for forced entry resistance.
- 20 ● Tempered glass shall be ASTM C1048, kind FT (fully tempered), Condition A (uncoated), Type I, Class  
 21 1 (transparent), Quality q3, conforming to ASTM C1048 and GANA Standards Manual. Color shall be  
 22 clear. Provide for typical interior glazing.
- 23 ● Laminated glass shall be ASTM C1172, kind LA, fabricated from two nominal 1/8" (min) pieces of Type  
 24 I, Class 1, Quality q3, flat annealed transparent glass conforming to ASTM C1036. Flat glass shall be  
 25 laminated together with a minimum of 0.030" thick, clear polyvinyl butyryl interlayer. The total  
 26 thickness shall be nominally 1/4" min.

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

- 28 GL-01 Low-E Insulating, clear: Standard Low-E coated, double-glazed units for exterior use without  
 29 tinting, 5/8" or thicker.  
 30 GL-02 Low-E Insulating, tinted: Standard Low-E coated, double-glazed units for exterior use with tinting,  
 31 5/8" or thicker.  
 32 GL-03 Bullet-resistant glazing: As indicated above. Typically, laminated glass for exterior use, and  
 33 laminated glass or polycarbonate for interior use.  
 34 GL-04 Vision panel of 1/4" laminated glass as noted above, sliding cover on ingress side.  
 35 GL-05 Tempered, mirrored (one-way) glazing, 1/4" (min) as noted above with reflective coating on one side.  
 36 GL-06 Laminated, mirrored, (one-way) glazing, 1/4" (min) as noted above with reflective coating on one  
 37 side.  
 38

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

- 40 Window Int 01 Interior aluminum storefront, 1/4" tempered glazing.



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

10  
11 Exterior window types indicated in the room data sheets include the following:

12	Window Ext 01	Aluminum framed windows, steel reinforced.
13	Window Ext 02	Aluminum framed windows.
14	Window Ext 03	Aluminum exterior storefront system, steel reinforced.
15	Window Ext 04	Aluminum exterior storefront system.
16	Window Ext 05	Aluminum curtainwall system.
17	Window Ext 06	Steel framed windows.
18	Window Ext 07	Clad wood windows.

### 19 D. Fencing

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

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

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

### 33 E. Elevators

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



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### 1 F. Stairs

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

### 5 G. Flooring

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

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

- 15 FF-01 Concrete, troweled, broom finish, exposed exterior and interior utility spaces.
- 16 FF-02 Concrete, troweled, uniform texture and appearance, prepared to receive other finishes.
- 17 FF-03 Concrete, troweled, uniform texture and appearance, sealed, exposed at interior spaces.
- 18 FF-04 Vinyl composition tile (VCT) or rubber tile.
- 19 FF-05 VCT, dissipative.
- 20 FF-06 Athletic resilient.
- 21 FF-07 Ceramic tile.
- 22 FF-08 Porcelain tile.
- 23 FF-09 Carpet tile.
- 24 FF-10 Concrete with seamless epoxy-resin non-slip flooring system, slope-to-floor drain, installed to comply  
25 with manufacturer's requirements specifications.
- 26 FF-10a Concrete, w/ seamless epoxy-resin non-slip flooring system, installed to comply with manufacturer's  
27 requirements specifications.
- 28 FF-11 Concrete, colored or stained with sealer, troweled, uniform texture and appearance.
- 29 FF-12 Concrete, sealed 8", with 5/8" reinforcing bars 6" O.C. each way.
- 30 FF-13 [reserved].
- 31 FF-14 Rubber mat (anti-fatigue).
- 32 FF-15 Match adjacent space (at existing conditions).
- 33 FF-16 Raised floor with anti-static VCT.
- 34 FF-17 Anti-static VCT.

### 35 Floor Finish Specifications:

36 Concrete flooring (FF-12) and (FF-11) shall be finished to meet manufacturer's smoothness requirements.  
37 Exposed concrete floors that are not required to have an applied floor finish shall receive a minimum of  
38 three coats of the manufacturer's approved sealer. Colored concrete floor shall be colored pigment integral  
39 to the concrete mix.



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1 A seamless epoxy-resin flooring system (FF-10) shall meet Master Painters Institute (MPI) standards and  
 2 shall be a two-part epoxy system. Preparation of the surface shall be per manufacturer's recommendations.  
 3 Application of seamless trowel-applied epoxy resin flooring shall require finish coats with a dry-film  
 4 thickness of not less than 0.1 millimeter 4 mils per coat, minimum. Apply two coats in light industrial areas  
 5 and three coats in heavy industrial/high traffic areas. Detention processing area shall receive 3 coats. Epoxy  
 6 shall be low volatile organic compound (VOC).

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

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

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

17 In rooms where electrical and voice/data equipment is in use, dissipative VCT (FF-05) shall be used to  
 18 mitigate the effects of static electricity. Dissipative tile shall be of commercial grade with through pattern  
 19 and an antistatic additive and shall be installed according to manufacturer's instructions. Dissipative vinyl  
 20 tile shall meet ASTM F1700 and shall be low VOC. Electrical resistance from floor to ground shall be  
 21 100,000,000 ohms when tested in accordance with ASTM F150. Tile shall be 1/8" thickness.

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

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

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

### 32 H. Base

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

- 34 BF-01 Resilient base, 4" H.
- 35 BF-02 Ceramic tile base 4" H (min).
- 36 BF-03 Wood base.
- 37 BF-04 Integral with seamless flooring, 8" H.





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- 1 BF-05 [reserved].
- 2 BF-06 [reserved].
- 3 BF-07 Match adjacent space (at existing conditions).

### 4 Base Specifications:

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

7 Ceramic tile base (BF-02) tiles shall comply with ANSI A137.1 and shall be standard grade tiles. Base shall  
8 provide a minimum breaking strength of 125 lbs. with a glass mat water-resistant gypsum backer board,  
9 for use as tile substrate in accordance with ASTM C1178/C1178M and a 1/2" thick glass mat gypsum backer  
10 board.

11 Integral bases (BF-04) shall be extended cove bases, 8" high, and shall use a vinyl or rubber round cap strip  
12 and vinyl or rubber fillet strip with a minimum radius of 3/4" at the perimeter and fixed vertical interruptions  
13 to the flooring. Inside and outside corner protectors of plastic approved by the flooring manufacturer shall  
14 be used.

### 15 I. Wall finishes and wall covering

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

- 17 WF-01 Gypsum board, 5/8" regular, painted.
- 18 WF-02 Gypsum board, 5/8" high impact, painted.
- 19 WF-03 Gypsum board, 5/8" Type X, painted.
- 20 WF-04 Gypsum board, 5/8" moisture resistant, painted.
- 21 WF-05 Gypsum board, 5/8" regular on furring channels, painted, for CMU substrates.
- 22 WF-06 Gypsum board, 5/8" regular on resilient channels, painted, for sound isolation assemblies on stud  
23 walls.
- 24 WF-07 Ceramic tile, full height, install over fiberglass mat gypsum panels.
- 25 WF-08 Ceramic tile, partial height, install over fiberglass mat gypsum panels.
- 26 WF-09 Fiber reinforced plastic/polymer (FRP), full height, install over gypsum board.
- 27 WF-10 Glazed masonry units.
- 28 WF-11 Prefinished metal panels.
- 29 WF-12 Paint, flat.
- 30 WF-13 Paint, semi-gloss.
- 31 WF-14 Paint, gloss.
- 32 WF-15 Paint, epoxy, semi-gloss.
- 33 WF-16 FRT 3/4" Plywood on furring channels, painted.
- 34 WF-17 Match adjacent space.

### 35 Wall Finish Specifications:

36 Gypsum board (WF-01, WF-02, WF-03, WF-04, WF-05, WF-06) shall comply with ASTM C 1396. Minimum  
37 panel thickness shall be 5/8". Type X panels shall be fire-rated. Moisture resistant panels are needed at



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1 locations subject to moisture. High impact-resistant panels shall be used for physical training rooms and  
2 detention rooms. Boards shall have tapered edges.

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

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

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

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

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

26 Expanded metal mesh shall be used for all rooms built to strong room standards per the current edition of  
27 the CBP SPPH, except those rooms using reinforced concrete ceilings. Expanded metal mesh shall meet  
28 ASTM F1267-89 type, Class 1, shall be #9-10-gauge minimum thickness (flattened) carbon steel in diamond  
29 pattern – 3.20" maximum LWD and 1.33" maximum SWD. Expanded metal mesh shall be fastened to steel  
30 stud and top and bottom runners using either screw or weld attachment. Screws or weld shall be spaced at  
31 6" on center maximum, with all corners fastened to the framing. Mesh splice shall occur at studs only. Splice  
32 between supports is not permitted unless: such splice is welded continuously top to bottom, or; mesh is  
33 overlapped 3", and fastened or welded every 6". Steel framing receiving expanded metal mesh shall be 16-  
34 gauge minimum.

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

- 36 Wall-01 Gypsum board on wood stud, sound insulation.
- 37 Wall-02 Gypsum board on metal stud, sound insulation.
- 38 Wall-03 Gypsum board on #9 (10 Ga) expanded metal mesh on stud, sound insulation.
- 39 Wall-04 Gypsum board on metal stud, uninsulated.



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

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

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

### 22 J. Ceilings

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

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

- 30 CF-01 Gypsum board, 5/8" regular, painted.  
 31 CF-02 Gypsum board, 5/8" regular, over #9 (10 Ga) expanded metal mesh, painted.  
 32 CF-03 Acoustic ceiling tile, suspended. Standard T-bar system.  
 33 CF-04 Exposed structure, no ceiling.  
 34 CF-05 Exposed structure, suspended ceiling not permitted.  
 35 CF-06 Gypsum board, 5/8" moisture resistant, over #9 (10 Ga) expanded metal mesh, painted.  
 36 CF-07 Gypsum board, 5/8" moisture resistant, painted.  
 37 CF-08 8" concrete with 5/8" rebar at 6" O.C, each way.  
 38 CF-09 Exposed structure, epoxy paint on metal deck.  
 39 CF-10 Pre-engineered, exposed structure, painted.  
 40 CF-11 Prefinished metal panels.  
 41 CF-12 Special.



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- 1 CF-13 HD galvanized chain link roof.  
 2 CF-14 Match adjacent space.  
 3 CF-15 5/8" gypsum board, over #9 (10 Ga) expanded metal mesh, adhered acoustic tile.  
 4 CF-16 5/8" gypsum board; acoustical tile not permitted
- 5 Ceiling finish specifications:
- 6 Acoustical panel ceiling system (CF-03) shall have factory applied mold prevention treatment. Type III  
 7 (mineral composition with standard washable painted finish) or Type IV (mineral composition with plastic  
 8 membrane-faced overlay) shall be used in all cases except when the following conditions apply: Rooms with  
 9 heavy moisture presence shall use a moisture resistant mineral composition unit; areas prone to dirt and  
 10 staining shall use a composition unit with a plastic film face; and areas subject to impact abrasion shall use  
 11 an impact resistant composition unit.
- 12 Gypsum board (CF-01, CF-02, CF-07, CF-15) shall comply with ASTM C 1396. Minimum panel thickness  
 13 shall be 5/8". Type X panels shall be used in fire-rated assemblies. Moisture resistant panels are needed at  
 14 locations subject to moisture and high impact-resistant panels are necessary for physical training rooms  
 15 and detention rooms. Boards shall have tapered edges.
- 16 Expanded metal mesh (CF-02, CF-06) shall be used for rooms as specified in the room data sheets and per  
 17 the most recent edition of the SPPH, except those rooms using reinforced concrete ceilings. Expanded metal  
 18 mesh shall meet ASTM F1267-89 type, Class 1 standard and shall be installed on interior side of metal stud  
 19 behind layer of 5/8" gypsum board.
- 20 **K. Equipment**
- 21 CBP shall be provided with the opportunity to extend warranties on any furniture, fixtures, and equipment  
 22 (FFE) provided by the contractor.
- 23 Architectural casework shall comply with AWI Section 400, Custom grade cabinets with high pressure  
 24 decorative laminate finish meeting NEMA LD3 standards. Horizontal laminate: nominal 0.05" thick;  
 25 vertical laminate: nominal 0.03" thick. Door and drawer edges shall be heavy duty 1/8" extruded polyvinyl  
 26 chloride with self-locking serrated tongue. Work surfaces and counter shall be high pressure decorative  
 27 laminate, or solid surfacing material.
- 28 Plastic laminate cabinets shall be high durability. All plastic laminates shall meet the requirements of  
 29 ANSI/NEMA LD 3 and ANSI A161.2 for high-pressure decorative laminates. Vertical general-purpose  
 30 standard grade plastic laminate shall be used and shall be 0.028" (plus or minus 0.004") in thickness. All  
 31 panel substrates not mechanically constrained, shall be backed with a laminate manufacturer's backing  
 32 sheet to minimize moisture absorption and provide substrate stabilization. Backing sheet thickness shall  
 33 be 0.020". Backing sheets shall be provided for all laminated casework components where plastic laminate  
 34 finish is applied to only one surface of the component substrate. Thermoset decorative overlays (melamine  
 35 panels) may be used for casework cabinet interior and drawer interior surfaces.
- 36 Plastic laminate countertops shall be high durability. All plastic laminates shall meet the requirements of  
 37 ANSI/NEMA LD 3 and ANSI A161.2 for high-pressure decorative laminates. Horizontal general-purpose  
 38 standard grade plastic laminate shall be used and shall be 0.048" (plus or minus 0.005") in thickness. All



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1 panel substrates not mechanically constrained shall be backed with a laminate manufacturer's backing  
2 sheet to minimize moisture absorption and provide substrate stabilization. Backing sheet thickness shall  
3 be 0.020". Backing sheets shall be provided for all laminated casework components where plastic laminate  
4 finish is applied to only one surface of the component substrate.

5 Stainless-steel countertops shall conform to ASTM A240/A240M. Countertop shall be 16-gauge work surface  
6 in type 304 or 316 stainless steel. Countertop finish shall be supported by either a plywood backer or  
7 stainless- steel hat channels. Sink bowls shall be fabricated integral per specification. Stainless-steel  
8 backsplash shall be 4 ½" tall by 1" deep, with a 45° return. Cove corner shall be standard on end splashes  
9 and backsplash. Up to 12' lengths are permitted without a seam. All joints shall be welded. Front edges  
10 shall be rolled. CBP prefers an EPA-approved anti-microbial copper alloy surface as an alternative to  
11 stainless steel.

12 Solid surface countertops shall include 100% acrylic, acrylic/polyester blends, or fiberglass reinforced  
13 polymers. This specification should be used for countertops, countertops with sinks, cabinet shelving, table  
14 tops, hot and cold break room surfaces, and other applications where a hard, durable, stain resistant surface  
15 is desired. Contractors shall use solid polymer material that is a homogeneous filled solid polymer; not  
16 coated, laminated or of a composite construction; meeting International Association of Plumbing and  
17 Mechanical Officials (IAPMO) Z124.3 and IAPMO Z124.6 requirements. Material shall have minimum  
18 physical and performance properties specified. Superficial damage to a depth of 0.01" shall be repairable by  
19 sanding or polishing. Material thickness shall be as indicated on the drawings. In no case shall material be  
20 less than ½" in thickness. Contractors shall submit a minimum 4" x 4" sample of each color and pattern for  
21 approval. Samples shall indicate full range of color and pattern variation. Approved samples shall be  
22 retained as a standard for this work. Test report results from an independent testing laboratory also must  
23 be submitted to attest that the submitted solid polymer material meets or exceeds each of the specified  
24 performance requirements.

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

- 29 ● Medium duty metal shelving: Adjustable shelving with interchangeable steel components. Shelf loading  
30 capacity shall be an evenly distributed load of 200 pounds/linear foot with no deflection across the shelf  
31 front flange. Posts shall be provided to support shelf loads without deformation and shall be punched  
32 1.5" on center to accommodate clips for vertical shelf adjustment. Shelves shall be of 18-gauge metal  
33 minimum with channel reinforcing of front flange and face and return flange on front and rear of  
34 shelves.
- 35 ● Heavy duty metal shelving: Adjustable shelving with interchangeable steel components. Loading  
36 capacity shall be an evenly distributed load of 4,000 pounds/unit with no deflection across the shelf front  
37 flange. Angled posts shall be 14-gauge steel minimum provided to support shelf loads without  
38 deformation and shall be punched 1.5" on center to accommodate clips for vertical shelf adjustment.  
39 Shelves shall be of 16-gauge steel minimum with channel reinforcing of front flange and face and return  
40 flange on front and rear of shelves.



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1 Bathroom accessories shall be stainless steel and commercial grade for ease of maintenance. All accessories  
2 and fixtures shall comply with the Architectural Barriers Act Accessibility Standards (ABAAS).

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

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

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

40 Corner guards for detention and secure areas shall be manufactured from Type 304, 16-gauge stainless steel  
41 and shall be field attached non-removable screws. All other corner guards shall be rubber or aluminum.



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- 1 Rubber corner guards shall be minimum 0.0875" thick at corners field attached using construction adhesive.  
2 Corner guards shall be provided from a single source.
- 3 The minimum size of white boards in offices, conference rooms, and training rooms is 4' high x 8' wide and  
4 the minimum size in break areas is 4' x 4'.
- 5 Bulletin boards shall be framed (solid wood or aluminum), minimum 36" high x 60" wide. Bulletin boards  
6 in public areas shall be provided with a tamperproof, lockable enclosure.
- 7 Display cases shall be provided with adjustable height glass shelving, acrylic doors on wood or aluminum  
8 frame. Doors shall be lockable.
- 9 Transaction trays shall be stainless steel paper type (9" wide x 2" high) pass-through trays.
- 10 Lockers shall be Penco-Patriot or equal, painted metal, with an integrated locking mechanism. 24" wide x  
11 72" high x 24" deep, sloped top, hasp only, (1) ground fault circuit interrupter (GFCI) duplex outlet shall be  
12 provided in each locker.
- 13 Safes shall typically be GSA class V certified construction 4 drawer container, 49" high x 21" wide x 29"  
14 deep. For safes required in seizure storage spaces, please refer to the room data sheet for specific  
15 requirements.
- 16 Gun lockers shall be 4 ½" high x 6 ¼" wide x 16 ¾" deep recessed, with 16-gauge steel continuous piano  
17 hinge. Lockers shall be individually keyed and master keyed pin tumbler snap lock, two keys per  
18 compartment, and two master keys per locker. Lockers shall be chemically degreased and powder coat  
19 finished.
- 20 Gun racks for rifles and shotguns shall be provided as needed to support operations. Racks shall be easily  
21 accessible for deployment.
- 22 Mail stations shall be furnished of steel. Mail slots shall be a minimum 12" deep x 9" wide x 4" high.
- 23 L. Furniture (by others)
- 24 Furniture selection and procurement shall comply and meet the standards set forth by the ANSI/Business  
25 and Institutional Furniture Manufacturers Association (BIFMA) organizations. References to wood  
26 furniture shall be defined as typical mill wood custom A-grade furniture. All furniture shall be durable and  
27 long lasting.
- 28 Freestanding wood desk-based furniture is used in the private and shared offices. The desk-based furniture  
29 shall be capable of structurally supporting overhead desk storage. The supports for the overhead desk  
30 storage should not exceed approximately 6" in depth. Furniture arrangements which have office tenants'  
31 backs to the door should be avoided.
- 32 Chair arms should have adjustable width and height to avoid interference with officer's equipment. Chairs  
33 should be heavy-duty rated to allow for the extra weight of the officers assigned equipment.



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1 Panel-based system furniture is used for workstations in the common work areas. All the major components  
2 of the system shall be suspended from the panels. The panels provide some acoustical and visual privacy in  
3 the open office spaces. The workstations shall be electrified.

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

7



# STRUCTURAL REQUIREMENTS

Cargo Facilities Design Standard  
2019 (Draft)



**U.S. Customs and  
Border Protection**



## 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:

- Executive Order 13717, Establishing a Federal Earthquake Risk Management Standard, 81 FR 6407 (February 2, 2016).
- 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 Institute of Steel Construction (AISC) Steel Construction Manual.
- American Iron and Steel Institute (AIS) 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.
- Steel Deck Institute (SDI) Diaphragm Design Manual.
- American Welding Society (AWS) D1.1.
- 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.



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### 1 15.2.2 Anti-Terrorism and Force Protection and Progressive Collapse

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

### 5 15.2.3 Design Loads

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

### 14 15.2.4 Seismic Design/Seismic Upgrading

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

## 23 15.3 SYSTEMS AND MATERIALS

### 24 15.3.1 Overview

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

#### 28 A. Structural Concrete

29 The following should be provided for structural concrete:

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



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1 they cause shrinkage cracking in slabs. Joint and water stop location layouts should be submitted for  
2 approval.

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

5 In addition, the following criteria shall be met:

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

27 Precast architectural concrete should include the following:

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

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

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



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### 1 B. Masonry

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

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

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

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

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

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

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

### 28 C. Structural Steel

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

35 Structural steel shall have the following minimum grades:

- 36 ● Wide flange shapes: ASTM A992, Standard Specification for Structural Steel Shapes, (Fy=50 ksi).
- 37 ● HSS rectangular tubes: ASTM A500, Standard Specification for Cold-Formed Welded and Seamless  
38 Carbon Steel Structural Tubing in Rounds and Shapes, Grade B, (Fy=46 ksi).
- 39 ● HSS pipe: ASTM A53, Standard Specification for Pipe Steel, Grade B, (Fy=35 ksi).
- 40 ● Anchor rods: ASTM F1554 Standard Specification for Anchor Bolts at rigid connections.
- 41 ● High strength bolts: ASTM F3125.



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1 Contractors shall provide mill analyses and test reports. A testing laboratory shall be used for all required  
2 tests and inspections. In addition, contractors shall provide and install all structural steel, tubing, and pipe,  
3 high-strength bolts, carbon bolts, nuts, washers and paint.

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

11 Contractors must accomplish the following for steel roof decking:

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

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

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

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

### 31 D. Miscellaneous Metals

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

- 33 ● Welds shall be continuous, ground smooth, and flush.
- 34 ● Exposed joints shall be "hairline" quality.
- 35 ● Miscellaneous metals include but are not limited to the following: Screens, gratings, shelf angles,  
36 ladders, ladder cage, steel stairs, safety nosings, handrails, guardrails, pipe sleeves, pipe bench  
37 stanchions, pipe post bollards, water heater supports, sill angles, corner guards, access doors and panels,  
38 wire and expanded metal partitions, ornamental grilles, expansion joint covers, seismic joint covers,  
39 trench covers, jambs, and backing for overhead rolling doors.



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- 1       ● Miscellaneous metal shall be separated from dissimilar metals and from products containing lime or
- 2       other substances, which cause damage (galvanic corrosion).
- 3       ● Material and method of attachment shall be reported for each substrate encountered for all
- 4       miscellaneous metal components.
- 5       ● Contractor shall include finish requirements or reference finishes located in other sections of this
- 6       document.

### 15.4 BUILDING TYPES

8       Where applicable, cargo facilities are enclosed, finished buildings, utilizing any of the aforementioned materials.

9       Typically, cargo facilities shall be designed using wind loading for an enclosed structure, unless per ASCE 7,

10      the building has openings and considered to be partially enclosed. Floor vibration is considered, when designing

11      the floor-framing members. A minimum stiffness is provided to minimize the floor vibration to “slightly

12      perceptible”, on the Modified Reihner Meister Scale, or equivalent vibration perception/acceptance criteria.

### 15.5 OTHER NON-STRUCTURAL ELEMENTS

#### 15.5.1 Antennae

16      The project designer shall coordinate with the Office of Field Operations (OFO) and the port director for specific

17      requirements regarding building-mounted or tower-mounted communications antennae and shall provide full

18      design of any associated structures and towers. The preferred location for antennae is not on building roofs.

19      However, where roof-mounting is required, antennae design shall include sufficient mounting points and

20      required loading for roof design.

#### 15.5.2 Other Nonstructural Elements

22      All nonstructural elements, components, and equipment located within the building or on site shall be anchored

23      and/or braced to withstand vertical and horizontal loading requirements per IBC.



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# LIFE SAFETY AND FIRE PROTECTION

Cargo Facilities Design Standard  
2019 (Draft)



U.S. Customs and  
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## 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.



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1 The design team shall consult with the local fire department for the preferred location of the Knox Box. The  
2 design shall provide a Knox Box with appropriate keys and/or key access cards.

### 3 **16.2.4 Life Safety and Means of Egress**

4 The design team shall adhere to NFPA 101 for all means of egress requirements. For determination of building  
5 occupancy classification, most projects shall be business with temporary detention facilities (detained less than  
6 24-hours).

#### 7 A. Interior Finishes

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

#### 9 B. Fire Retardant Treated Plywood

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

#### 15 C. Spray Applied Fire Proofing

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

#### 19 D. Fire Separation

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

#### 22 E. Kennel Facility

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

### 25 **16.2.5 Special Security**

#### 26 A. Detention Areas

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

#### 31 B. Special Door Hardware

32 Delayed egress access door hardware may be required by CBP for detention areas and public waiting/queuing  
33 areas. The design team shall coordinate with CBP for the use of delayed egress access door hardware, either



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1 15 second or 30 second (maximum) delays. Contractors shall not use CDX-09, but shall use LKM-7000 series  
2 FF-L-2890B, which has push/pull capability with single motion releasing action.

### 3 C. Windows

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

### 6 D. Heating, Ventilation, and Air-Conditioning Ductwork

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

## 9 **16.3 FIRE PROTECTION AND MASS NOTIFICATION/FIRE ALARM PLANNING AND DESIGN**

### 10 **16.3.1 Overview**

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

### 12 **16.3.2 Codes and Regulations**

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

- 15 A. International Building Code, excluding Chapter 10.
- 16 B. National Fire Protection Association (NFPA)–National Fire Codes (All Documents):
- 17 ● NFPA 1 – Uniform Fire Code.
  - 18 ● NFPA 10 – Portable Fire Extinguishers.
  - 19 ● NFPA 13 – Installation of Sprinkler Systems.
  - 20 ● NFPA 72 – National Fire Alarm and Signaling Code.
  - 21 ● NFPA 101 – Life Safety Code.
  - 22 ● NFPA 150 – Fire and Life Safety in Animal Housing Facilities.

### 23 C. CBP SPPH.

### 24 D. Local Ordinance: Local fire department.

### 25 **16.3.3 Fire Protection Systems**

#### 26 A. General Criteria

- 27 ● Protection system design documents shall be in accordance with the applicable codes. Floor plans shall  
28 be provided, showing, including but not limited to the following:
- 29 ● Water supply.
- 30 ● Backflow preventer.
- 31 ● System control assemblies.
- 32 ● 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.
- 10 ● Design of all specialty fire protection systems (kitchen hood suppression, clean-agent fire  
11 suppression systems, etc.).
- 12 ● Sprinkler rooms shall be located near other service rooms, with exterior connections within a fenced  
13 area.
- 14 ● Ensure shelving and cabinets inside of rooms do not block, interfere or hinder sprinklers.
- 15 B. Fire Sprinkler Systems
- 16 Contractors shall provide fire sprinkler systems that are appropriate for the hazard and in accordance with  
17 the applicable codes.
- 18 C. Standpipe Systems
- 19 Contractors shall provide standpipe systems when required by the applicable codes and in accordance with  
20 NFPA 14.
- 21 D. Other Fire Suppression Systems
- 22 Contractors shall provide other fire suppression systems, when required, by hazard and in accordance with  
23 the applicable codes, i.e., wet chemical fire suppression system, clean-agent fire suppression system, etc. All  
24 other fire suppression systems shall be coordinated with CBP.
- 25 E. Special Conditions
- 26 1. Local Area Network  
27 Contractors shall provide a dry-pipe fire sprinkler system with a supervised isolation control valve  
28 for all local area network (LAN)/supplemental local area network (SLAN) rooms and concealed type  
29 fire sprinklers with a temperature rating of 212°F. The sprinkler piping for all LAN/SLAN rooms  
30 shall be tested at 220 psi minimum for two hours.
  - 31 2. Pre-Action Fire Sprinkler Systems  
32 The use of pre-action fire sprinkler systems is prohibited.
  - 33 3. Hazardous Areas  
34 For hazardous areas, the fire sprinkler system shall use Extra-Hazard Group 2 classification for the  
35 design and hydraulic calculations.



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### 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



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1 the exterior of the building, and open offices. The system shall generate both automatic prerecorded and  
2 manual (live voice) emergency messages via the audible notification appliances.

### 3 C. Mass Notification/Fire Alarm System Reporting

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

### 6 D. Other Discipline Coordination

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

### 9 E. Special Conditions

#### 10 1. Fire Alarm Control Panels

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

#### 16 2. Battery Requirements

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

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

#### 22 3. Smoke Detectors

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

#### 26 4. Manual Pull Stations

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

#### 31 5. Wiring, Circuits and Conduit

32 Each notification appliance circuit shall be loaded not to exceed 80 percent of its rated output. All  
33 wiring shall be installed in metallic conduit and run in the vertical or horizontal plane while making  
34 all turns at 90° angles. Wiring may be solid or stranded copper, except for speaker circuits, which  
35 shall be shielded. Signaling line circuits and initiating device circuits shall be 16-gauge wire at a  
36 minimum. All circuits shall be Class A per NFPA 72. At least two notification appliance circuits  
37 should exist on each floor.



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- 1           6. LAN Rooms  
2           Contractors shall provide complete area smoke detection coverage in all LAN rooms.
- 3           7. Wireless Fire Alarm Components  
4           Wireless fire alarm components and systems are prohibited.
- 5           8. Painting  
6           In unfinished areas and in concealed conditions, contractors shall paint all fire alarm conduit,  
7           junction boxes, and covers with one coat of red alkyd gloss enamel paint. In finished areas with  
8           exposed conduit, contractors shall paint all fire alarm conduit, junction boxes, and covers to match  
9           the room finish, identify "fire alarm" on the inside cover of all junction boxes and put painted red  
10          bands 3/4" wide at 10-foot intervals on all conduit and at each side of a floor, wall, and ceiling  
11          penetration. Anodized red conduit is also acceptable.
- 12          9. Elevators  
13          Smoke and heat detection shall be installed in elevator shafts and machine rooms in accordance  
14          with the applicable codes.
- 15          10. Building Exterior  
16          Contractors shall provide complete strobe coverage along the exterior of building and under any  
17          canopies. The strobe is intended to provide coverage along the entire exterior of the building, up to  
18          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 2½" 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.





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1 The following describes the types of sprinklers to be provided:

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

Cargo Facilities Design Standard

2019 (Draft)



U.S. Customs and  
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## 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.
- 7 ● Backflow preventers/relief valves.
- 8 ● Water heaters, water coolers.
- 9 ● Domestic water booster pump.
- 10 ● Vibration isolation.
- 11 ● Lab waste neutralization.
- 12 ● Compressed air systems.
- 13 ● Emergency shower/eyewashes.
- 14 ● Showers/lavatories/toilets.

### 15 17.4 SYSTEMS AND MATERIALS

#### 16 17.4.1 Special Systems Requirements

##### 17 A. Port Office Buildings

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

##### 22 B. Inspection Areas

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

##### 29 C. Canine Facilities

30 Kennel buildings and adjoining outdoor space shall be equipped with freeze proof hose bibs where  
31 temperatures approach 32 °F. High pressure water is required for hose bibs and shall be provided by point  
32 of use booster pump systems. All domestic water systems to the canine facilities shall be equipped with  
33 backflow preventers to protect against contamination of the water source. In areas where floor drains are  
34 required, the floor slab shall slope toward the drain in the center of the room or to a trough along the edge  
35 of the canine run for wash-down. Additionally, the drainage system in the animal housing area shall  
36 accommodate canine waste, which requires appropriate treatment and disposal. Consultation with the  
37 state's veterinarian office is advised. Disposal of animal waste shall be coordinated with local government.  
38 Most municipalities allow kennels to tie their waste line to the main sewer line after seeking permission



## U.S. Customs and Border Protection

1 from the government. Septic systems are a viable option when connecting to the municipal system is not  
2 allowed. Septic tanks shall accommodate animal waste and cleaning solutions.

### 3 D. Detention

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

### 12 E. Laboratory

13 Laboratories shall be equipped with a stainless-steel sink and stainless-steel backsplash and a minimum of  
14 12-inch-deep bowls. A 3-horsepower minimum disposal/grinder unit with emergency cutoff panic button  
15 shall be installed. The minimum drain size shall be 4" with a cleanout trap. An ANSI-compliant emergency  
16 eye/face wash unit must be included. Where a steam sterilizer is used, appropriate water supply filtration  
17 system and drip pan and drain are needed to prevent deterioration of the sterilizer equipment.

## 18 17.5 MATERIALS:

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

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

### 27 LAV-1 Wall Hung Basin — Battery Powered Faucet

- 28 ● Basin: 20" high x 18" wide x 8¾" deep.
  - 29 ● Vitreous china.
  - 30 ● Wall hung, for carrier with concealed arms with CP escutcheon.
  - 31 ● Front overflow.
  - 32 ● Faucet ledge, 2" clearance from wall.
- 33 ● Battery powered faucet FC-2:
  - 34 ● 4" centerset.
  - 35 ● Brass construction.
  - 36 ● 0.5GPM maximum flow non-aerating laminar flow spray outlet.
  - 37 ● Infrared sensor on faucet base.



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- 1                   • Below deck solenoid valve with serviceable strainer filter.
- 2                   • Module control assembly with splash proof junction box and mounting kit, below deck, in
- 3                   module control assembly.
- 4                   • Point of use thermostatic water mixing valve:
- 5                   • Bronze body.
- 6                   • Temperature adjustment by using a hex wrench.
- 7                   • 3/8" inlet compression fittings with stainless-steel 20" flexible hose and 1/2" male national pipe
- 8                   thread (MNPT) outlet connection.
- 9                   • Built-in checks housed in enclosure.
- 10                  • Set valve temperature at 114.8°F.
- 11                  Note: Provide tee, adaptors, and flexible copper tubing to suit installation.
- 12                  • Open grid drains:
- 13                  • Chrome-plated cast brass one-piece top.
- 14                  • 1/16" thick.
- 15                  • Tubular 1 1/4" tailpiece.
- 16                  • Faucet supplies:
- 17                  • Chrome finish.
- 18                  • Polished brass.
- 19                  • Commercial duty 1/4 (one-quarter) turn ball valve angle stop.
- 20                  • 1/2" I. D. Inlet x 5" horizontal extension tubes, combination V. P.
- 21                  • Loose key handle, escutcheon, and flexible copper riser.
- 22                  • Heavy cast brass adjustable body.
- 23                  • 1 1/4" inlet.
- 24                  • Shallow wall flange.
- 25                  • Heavy brass nipple with heavy brass set screw flange.
- 26                  • Single Carrier:
- 27                  • Mounted on concrete floor.
- 28                  • Heavy gauge epoxy coated steel offset uprights with welded feet.
- 29                  • Adjustable concealed epoxy coated cast iron arms.
- 30                  • Minimum space required for one unit: 4"
- 31                  • Minimum space required for two-to-six (2 – 6) units in a row: 6" finished metal stud wall to
- 32                  back of pipe space.
- 33   LAV-1A        Wall Hung Basin–Battery Powered Faucet
- 34                  • Wheelchair basin:
- 35                  • 20 1/16" high x 27" wide x 6 3/8" deep.
- 36                  • Vitreous china.
- 37                  • Wall hung, for carrier with concealed arms.
- 38                  • Front overflow.
- 39                  • Faucet ledge.
- 40



## U.S. Customs and Border Protection

- 1 ● Battery Powered faucet FC-4:
- 2 ● 4" centerset.
- 3 ● Brass construction with vandal resistant pressure compensating 0.5 GPM maximum flow.
- 4 ● Non-aerating multi-laminar flow spray outlet.
- 5 ● Infrared sensor on faucet base.
- 6 ● Below deck solenoid valve with serviceable strainer filter.
- 7 ● Module control assembly with splash proof junction box and mounting kit.
- 8 ● Below deck, in-module control assembly.
- 9 ● Point of use thermostatic water mixing valve:
- 10 ● Bronze body.
- 11 ● Temperature adjustment by using a hex wrench.
- 12 ● 3/8" inlet compression fittings with stainless-steel 20" flexible hose and 1/2" MNPT outlet
- 13 connection.
- 14 ● Built-in checks housed in enclosure.
- 15 ● Set valve temperature at 114.8°F.
- 16 Notes:
- 17 ● Provide tee, adaptors, and flexible copper tubing to suit installation.
- 18 ● Offset open grid drain, chrome-plated cast brass one-piece top, 1/16" (1.5mm) thick, tubular
- 19 1 1/4" tailpiece.
- 20 ● Faucet supplies:
- 21 ● Chrome finish polished brass.
- 22 ● Commercial duty 1/4 (one-quarter) turn, ball valve, angle stop, 1/2" I. D.
- 23 ● Inlet x 5" horizontal extension tubes, combination vent pipe.
- 24 ● Loose key handle, escutcheon and flexible copper riser.
- 25 ● Heavy cast brass adjustable body.
- 26 ● 1 1/4" inlet.
- 27 ● Shallow wall flange.
- 28 ● Heavy brass nipple with heavy brass set screw flange.
- 29 ● Vandal-resistant sanitary covering.
- 30 ● Flexible seamless molded closed-cell PVC resin, formulated with anti-microbial additive to
- 31 limit the growth of fungus and bacteria, to exposed piping (to protect against
- 32 heat/contusions) as per local codes.
- 33 ● Mounted on concrete floor, concealed arms with sliding adjustable arm brackets.
- 34 MS-1 Service / Mop Sink-Two Handle Faucet
- 35 ● Square service/mop sink:
- 36 ● 24" high x 24" wide x 10" deep.
- 37 ● Floor mounted.
- 38 ● Molded stone.
- 39 ● Plain curbs.
- 40 ● Stainless-steel drain with strainer.
- 41 ● 3" outlet.





**U.S. Customs and  
Border Protection**

- 1 ● Wall mounted, two-handle faucet FC-3:
- 2 ● Center-hole only.
- 3 ● Chrome-plated.
- 4 ● Cast brass body.
- 5 ● Integral stops.
- 6 ● Spout with atmospheric vacuum breaker and bucket hook.
- 7 ● Lever handle.
- 8 ● Top brace.
  
- 9 ● Bumper Guard:
- 10 ● Type 304 stainless-steel.
  
- 11 ● Mop hanger:
- 12 ● Type 304 stainless-steel.
- 13 ● Constructed of 22-gauge.
  
- 14 ● Back splash panel:
- 15 ● Stainless-steel panel.
  
- 16 SH-1 Shower Valve, Head, and Hand Shower
- 17 ● Shower:
- 18 ● Pressure balancing mixing valve.
- 19 ● Brass body.
- 20 ● Pressure balancing, washerless, ceramic, drip-free disc valve cartridge.
- 21 ● Integral hot limit stop.
- 22 ● Screwdriver stops.
- 23 ● Brass wall escutcheon.
- 24 ● Metal lever handle.
- 25 ● 2.5 U.S. Gal. flow per minute adjustable showerhead.
- 26 ● Cast brass arm.
  
- 27 ● Diverter valve trim:
- 28 ● Metal lever handle.
- 29 ● 2-way, n-wall diverter valve.
  
- 30 ● Soft spray hand shower:
- 31 ● 2.5 GPM maximum flow rate.
- 32 ● Spray pattern adjust from conventional spray to gentle flow to massage.
- 33 ● Rubber nozzles.
  
- 34 ● Hand shower vacuum breaker:
- 35 ● Between supply outlet and personal shower hose.
  
- 36 ● FD-1 Floor drain:
- 37 ● 2" outlet.
- 38 ● Epoxy-coated cast iron.



## U.S. Customs and Border Protection

- 1                   • Anchor flange.  
2                   • Adjustable round nickel bronze strainer.  
3                   • Reversible clamping collar with primary and secondary weep holes.
- 4           • P-Trap:  
5               • Same material as the connecting pipe drain.
- 6           Notes:  
7               • Provide access to faucet/valve.  
8               • Comply with local codes for shower control location and trim kit requirements.  
9               • Comply with local codes for complete grab bar positions, shower control location and faucet  
10              trim kit requirements.  
11              • Provide service stops.
- 12 SK-1   Countertop Mount Double Sink-Two Handle Faucet
- 13           • Double bowl rectangular countertop mount sink:  
14               • 3-hole.  
15               • 8" centerset.  
16               • 20-13/16" high x 31¼" wide x 10" deep.  
17               • Spillway.  
18               • Back ledge.  
19               • Type 316, 18-gauge stainless-steel.  
20               • Satin finish rim and bowl mounting kit.  
21               • Fully undercoated to reduce condensation and resonance.  
22               • Factory applied rim seal.  
23               • 3½" crumb cup waste assembly.
- 24           • Two handle faucet FC-1:  
25               • 8" centerset, cast brass body, gooseneck swing spout, with vandal resistant pressure  
26               compensating 1.5 GPM max flow, aerator outlet, red and blue indexed wrist blade handles.
- 27           • Point of use thermostatic water mixing valve:  
28               • Bronze body.  
29               • Temperature adjustment by using a hex wrench.  
30               • ¾" inlet compression fittings with stainless-steel 20" flexible hose and ½" MNPT outlet  
31               connection.  
32               • Built-in checks.  
33               • Housed in 5" high x 3¾" wide x 3-3/16" deep enclosure.  
34               • Valve temperature 114.8 °F.
- 35           Notes:  
36               • Provide tee, adaptors, and flexible copper tubing to suit installation.  
37               • Tempered water to hot side of faucet.
- 38           • Faucet Supplies:  
39               • Chrome finish polished brass.  
40               • Commercial duty ¼ (one-quarter) turn.



## U.S. Customs and Border Protection

- 1                   • Ball valve.
- 2                   • Angle stops.
- 3                   • ½" Inside diameter (I.D.) Inlet x 5" horizontal extension tubes, combination V. P.
- 4                   • Loose key handle, escutcheon and flexible copper riser.
- 5   **SK-2**   **Countertop Mount Sink-Two Handle Faucet**
- 6                   • Single bowl rectangular countertop mount sink:
- 7                   • 2-hole.
- 8                   • 4" centerset.
- 9                   • 14-5/16" high x 16-5/8" wide x 7" deep.
- 10                  • Back ledge.
- 11                  • Type 316, 20-gauge stainless-steel, satin finish rim and bowl, mounting kit, fully
- 12                  undercoated to reduce condensation and resonance, factory applied rim seal.
- 13                  • Two-handle faucet FC-1:
- 14                    • 4" centerset.
- 15                    • Brass construction.
- 16                    • 2.2GPM maximum flow aerator outlet.
- 17                    • Brass swing gooseneck spout.
- 18                    • Red and blue indexed wrist blade handles.
- 19                  • Point of use thermostatic water mixing valve:
- 20                    • Bronze body.
- 21                    • Temperature adjustment by using a hex wrench.
- 22                    • ¾" inlet compression fittings with stainless-steel 20" flexible hose and ½" MNPT outlet
- 23                    connection.
- 24                    • Built-in checks.
- 25                    • Housed in 5" high x 3¾" wide x 3-3/16" deep enclosure.
- 26                    • Valve temperature 114.8°F.
- 27                  Notes:
- 28                    • Provide tee, adaptors and flexible copper tubing to suit installation.
- 29                    • Tempered water to hot side of faucet.
- 30                  • Faucet Supplies:
- 31                    • Chrome finish polished brass.
- 32                    • Commercial duty ¼ (one-quarter) turn ball valve, angle stop.
- 33                    • ½" I. D. Inlet x 5" horizontal extension tubes, combination V. P.
- 34                    • Loose key handle, escutcheon, and flexible copper riser.
- 35   **SK-3**   **Hand Washing Sink**
- 36                  • Hand washing sink:
- 37                    • 16" high x 19" wide x 5¼" deep.
- 38                    • Sink and cabinet constructed of 14-gauge Type 304 stainless-steel with satin finish.
- 39                    • Angled front corners.



## U.S. Customs and Border Protection

- 1                   • Front access panel for easy maintenance access.
- 2                   • 1½" stainless-steel dome strainer with integral tailpiece and P-trap.
- 3                   • "Z-Clip" wall hanger for mounting (fasteners by others).
- 4           • Electronic powered battery faucet FC-2:
- 5                   • Below deck thermostatic mixing valve.
- 6           • Supplies:
- 7                   • Chrome-plated.
- 8                   • Commercial pattern ¼ (one-quarter)-turn brass ball valve with convertible loose key handle.
- 9                   • Chrome-plated copper risers and deep brass flange.
- 10                  • Inlet shall be ½" sweat x 5" long and ¾" compression.
- 11           • P-trap:
- 12                   • Chrome-plated.
- 13                   • Polished cast brass adjustable body.
- 14                   • 1½" inlet and outlet with cleanout plug.
- 15                   • Seamless brass wall bend and escutcheon.
- 16   UR-1   Wall Hung Urinal - For Flush Valve-Concealed- "No Touch"-Hardwired
- 17           • Urinal:
- 18                   • White vitreous china.
- 19                   • Range of 0.125 U.S. Gal—0 U.S. Gal per flush.
- 20                   • Wall hung.
- 21                   • Extended sides for privacy.
- 22                   • Wash down action.
- 23                   • Flushing rim ¾" diameter.
- 24                   • Back spud.
- 25                   • Elongated rim.
- 26                   • Integral P-trap.
- 27                   • Outlet connection 2".
- 28                   • Two wall hangers.
- 29                   • Stainless-steel strainer.
- 30           • Concealed electronic "no-touch" hard wired-plug-in flush valve FV-2:
- 31                   • Chrome-plated.
- 32                   • 0.125 U.S. Gal factory set flow.
- 33                   • Self-cleaning brass piston with integral wiper spring.
- 34                   • Hydraulic metal push button assembly for mechanical over-ride.
- 35                   • Infrared sensor.
- 36                   • Mechanical courtesy manual over-ride flush.
- 37                   • Vacuum breaker housed in recessed wall box located above urinal.
- 38                   • Plug-in AC power supply included.

39



## U.S. Customs and Border Protection

- 1           ● Plug-in transformer:
- 2               ● 100VA-250VA/6VA 3A.
- 3               ● 72" long cord with quick connect connector.
- 4           Note: Provide electrical duplex box with ground fault interrupter.
- 5           ● Single carrier:
- 6               ● Mounted on concrete floor.
- 7               ● Heavy gauge epoxy coated steel offset uprights with welded feet.
- 8               ● Universal steel hangar support plate and bottom bearing plate with integral mounting
- 9               brackets.
- 10              ● Minimum space required for one unit: 4".
- 11              ● Minimum space required for two–six (2-6) units in a row: 6".
- 12              ● Finished metal stud wall to back of pipe space.
- 13           ● Wall access cleanout:
- 14               ● Cast iron body ferrule.
- 15               ● Threaded brass countersunk cleanout plug.
- 16               ● Vandal proof stainless-steel screw.
- 17               ● Stainless-steel wall access cover.
- 18   UR-1A Wall Hung Urinal-For Flush Valve-Concealed-No Touch–Hardwired–ABAAS Compliant
- 19           ● Same as UR-1 *except* mounted per ABAAS.
- 20   WC-1 Floor Mounted Toilet–For Flush Valve-Concealed-No Touch-Hardwired
- 21           ● Elongated 16½" high, high efficiency toilet (HET) Toilet:
- 22               ● Vitreous china with antimicrobial surface which inhibits the growth of stain and odor
- 23               causing bacteria mold and mildew.
- 24               ● Floor mounted.
- 25               ● Siphon jet flush action.
- 26               ● Range of 1.1 U.S. Gal – 1.6 U.S. Gal per flush.
- 27               ● Condensate channel.
- 28               ● 2⅜" fully glazed internal trap way, back outlet.
- 29               ● Bolt caps.
- 30               ● 1½" diameter.
- 31               ● Top spud.
- 32           ● Extra heavy-duty toilet seat:
- 33               ● For elongated bowl, open front.
- 34               ● Solid polypropylene plastic with antimicrobial surface, less cover.
- 35               ● Reinforced stainless-steel check hinges.
- 36               ● Post nuts and washers.

37

38



## U.S. Customs and Border Protection

- 1 ● Concealed flush valve FV-1:
  - 2 ● Satin finish.
  - 3 ● 1.28 U.S. Gal factory set flow.
  - 4 ● Self-cleaning brass piston with integral wiper spring prevents clogging.
  - 5 ● Hydraulic metal push button assembly for true mechanical over-ride.
  - 6 ● Infrared sensor.
  - 7 ● Mechanical courtesy manual over-ride flush.
  - 8 ● Exposed CP elbow for top spud connection.
  - 9 ● Vacuum breaker housed in recessed box located above the toilet (sensor to clear toilet seat
  - 10 cover).

- 11 ● Plug-in transformer:
  - 12 ● 100VA–250VA/6VA, 3A.
  - 13 ● 72" long cord with quick connect connector.

14 Note: Provide electrical duplex box with ground fault interrupter.

- 15 ● Wall flange:
  - 16 ● Same material as the connecting pipe drain.
  - 17 ● All brass bolts
  - 18 ● Rubber gasket.

19 WC-1A Floor Mounted Toilet – For Flush Valve-Concealed - No Touch-Hardwired - ABAAS Compliant

- 20 ● Same as WC-1 *except* mounted per ABAAS.

21 WCD-1A Combo Toilet/Basin-ABAAS Compliant-Stainless-Steel-Security

22 Angled Basin and Toilet, ABAAS-Compliant, Compact Combination:

- 23 ● This fixture is arranged to be installed on a finished wall and serviced from an accessible pipe chase.
- 24 ● Fixture is fabricated from 14-gauge, Type 304 stainless-steel of seamless weld construction with a
- 25 satin finish on the outside—as well as the inside—of the toilet bowl.
- 26 ● Cabinet interior is sound-deadened with a fire-resistant material.
- 27 ● Optional wall sleeve or metal template is recommended on all installations for required wall
- 28 openings.
- 29 ● Standard oval lavatory bowl is 9¼" high x 13½" wide x 5" deep.
- 30 ● Lavatory waste outlet is 1½" outside diameter (OD) plain end.
- 31 ● Toilet is blowout jet type with elongated bowl.
- 32 ● Toilet waste outlet is 2⅝" O.D. plain end extending 3" beyond the fixture for wall outlet or gasketed
- 33 waste for floor outlet.
- 34 ● Unit is provided with a hydraulically actuated flush valve (shipped loose).
- 35 ● Grab bar is heavy gauge Type 304 stainless-steel construction, 1½" diameter x 36" long.
- 36 ● Grab bar is positioned behind toilet and is field installed to wall and to side of lavatory cabinet,
- 37 angled left, on-floor, wall outlet, bubbler, penal, single temperature.



## U.S. Customs and Border Protection

- 1           • Air-control, metering, hydraulic flush valve, electronic flush valve with piezo pushbutton, flush  
2 valve through wall connector, lavatory waste extension should be 3" standard.
- 3           • Length beyond fixture must be specified.
- 4           • 3" standard toilet waste extension should specify length beyond fixture.
- 5 EWC-1A Fountain Cooler-Stainless-Steel Receptor and Cabinet-Wall Mounted-Barrier-Free Design/ABAAS  
6 Compliant.
- 7           • Wall-mounted, vandal resistant bi-level pressure water cooler with 32" back panel, shall deliver a  
8 minimum of 8.0 GPH of water at 50 °F cooled from 80 °F inlet water and 90 °F ambient.
- 9           • Unit shall be made from 18-gauge, Type 304 stainless-steel with a brushed finish.
- 10          • Unit shall be activated by self-closing, frontal push pads, by using less than five pounds of force,  
11 which activates internally mounted valves with adjustable stream regulators controlling the water  
12 flow.
- 13          • Cooling system shall use R-134a refrigerant and be capillary tube controlled.
- 14          • An adjustable thermostat with an off position shall control the refrigeration system.
- 15          • Bubblers shall be polished chrome-plated brass with non-squirt features and operate on water  
16 pressure range of 20–105 psi.
- 17          • Unit shall have two-piece contoured bowls with P-traps integral to the unit.
- 18          • Unit shall adhere to ANSI A117.1 and Americans with Disabilities Act of 1990 frontal approach and  
19 protruding objects requirements, child ABAAS parallel and frontal approach and ANSI/NSF 61,  
20 Section 9.
- 21          • Unit shall be listed by Underwriters Laboratories for both the U.S. and Canada, compliant to the  
22 Air Conditioning and Refrigeration Institute Standard 1010.
- 23          • Fountain Supplies:
- 24            • Chrome-plated with loose key heavy all brass straight stops.
- 25          • P-trap(s):
- 26            • 1¼" metal construction.
- 27 EEW-1 Emergency Eye/Face Wash-Wall Mounted
- 28          • Wall mounted eye/face wash, with a stainless-steel shrouded bowl.
- 29          • ABS plastic eye/face wash spray heads.
- 30          • ABS yellow plastic eye/face wash heads with integral flip dust covers, internal flow controls and  
31 filters to remove debris from the water.
- 32          • ½" National Piper Taper (NPT) chrome-plated brass stay-open ball valve with a stainless-steel push  
33 handle and a 50-mesh inline strainer, ½" (13mm) NPT female threaded, chrome-plated brass inlet.
- 34          • Chrome-plated brass, 1¼" O.D. tailpiece.
- 35          • Stainless-steel 11¾" diameter bowl with shrouded wrap around skirt.
- 36          • 11-gauge galvanized steel wall bracket with a yellow powder coated finish.
- 37          • ANSI-compliant, vertical identification sign.
- 38          • A waterproof test card to record the date and inspector's name for weekly functional testing of the  
39 unit.
- 40          • An anti-microbial agent is molded into the ABS material, providing integrated protection.



## U.S. Customs and Border Protection

- 1           ● Meets ANSI Z358.1-2009.
- 2           ● P-trap:
- 3                 ● Chrome-plated.
- 4                 ● 17-gauge.
- 5                 ● Brass adjustable body.
- 6                 ● 1¼" and escutcheon.
- 7 EEW-1 TMV   Emergency Eye / Face Wash Tempered Water Mixer (Single Station) (Internal Cold By-Pass)
- 8 Supply Fixture
- 9           ● Thermostatic temperature control valve, all brass design, with paraffin-filled motor, check stops, tamper-resistant temperature adjustment control.
- 10           ● Factory set temperature to 85 °F outlet temperature.
- 11           ● Dual internal cold-water by-pass to ensure flow in the event of a valve failure or loss of hot water supply, dial thermometer.
- 12           ● 8 GPM of tempered water with a 30-psi pressure drop across valves and 50% flow on the by-pass.
- 13           ● ½" connections.
- 14
- 15
- 16 ES-1   Emergency Drench Shower and Eye/Face Wash — Floor Mounted
- 17           ● Pedestal mounted combination station with an eye/face wash:
- 18                 ● Stainless-steel, 7¾" diameter showerhead with a 20 GPM flow regulator.
- 19                 ● Shower Valve 1" NPT rough chrome-plated brass stay-open ball valve.
- 20                 ● Unit is provided with a stainless-steel actuator arm and a 29" stainless-steel pull rod.
- 21                 ● Eyewash Bowl Stainless-steel, 11¾" diameter bowl.
- 22                 ● Spray Head Assembly ABS yellow plastic eyewash heads with integral flip dust covers, internal flow controls and filters to remove debris from the water.
- 23                 ● An anti-microbial agent is molded into the ABS material, providing integrated protection.
- 24                 ● 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.
- 25                 ● Water Supply 1¼" NPT female threaded side or top inlet.
- 26                 ● Waste 1¼" NPT female outlet.
- 27                 ● Piping & Mounting Schedule 40 galvanized steel piping and a 9⅝" diameter cast iron floor flange with a yellow powder coated finish.
- 28                 ● Universal Sign ANSI compliant, vertical identification sign.
- 29                 ● Weekly Test Tag A waterproof test card to record the date and inspector's name for weekly functional testing of the unit.
- 30                 ● Meets ANSI Z358.1-2009.
- 31
- 32
- 33
- 34
- 35           ● Floor drain FD-2:
- 36                 ● Epoxy coated cast iron body, anchor flange, reversible clamping collar with primary and secondary weep holes, 8" nickel bronze adjustable strainer.
- 37                 ● Located under eyewash and shower with waterproofing flange.
- 38                 ● P-trap.
- 39





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- 1 ES-1 TMV Emergency Combination Eye/Face Wash and Emergency Drench Shower (Single Station)  
2 Tempered Water Mixer (Internal Cold By-Pass)
- 3 • Supply fixture:
- 4 • Thermostatic temperature control valve.
  - 5 • All brass design, with paraffin filled motor, check stops, tamper-resistant temperature  
6 adjustment control.
  - 7 • Factory set temperature to 85 °F outlet temperature.
  - 8 • Dual internal cold-water by-pass to ensure flow in the event of a valve failure or loss of hot  
9 water supply.
  - 10 • Dial thermometer.
  - 11 • 33GPM of tempered water with a 30-psi pressure drop across valves and 50% of the normal  
12 flow on the by-pass.
  - 13 • ¾" inlets.
  - 14 • 1"outlet.
- 15 ES-2 Emergency Drench Shower and Eye/Face Wash-Floor Mounted (Heat Traced)  
16 Heat traced, pedestal mounted combination station with an eye/face wash:
- 17 • Yellow, ABS plastic 7¾" diameter showerhead with a 20 GPM flow regulator.
  - 18 • An antimicrobial agent molded into the ABS material, providing integrated protection.
  - 19 • 1" IPS rough chrome-plated brass stay-open ball valve.
  - 20 • Stainless-steel actuator arm and a 29" stainless-steel pull rod.
  - 21 • ABS yellow plastic eye/face wash heads with integral flip dust covers, internal flow controls and  
22 filters to remove debris from the water.
  - 23 • An anti-microbial agent molded into the ABS material, providing integrated protection.
  - 24 • ½" IPS chrome-plated brass, stay-open ball valve with a stainless-steel stem and push handle.
  - 25 • An integrated weep hole to drain residual water from the eye/face wash heads after each use.
  - 26 • Freeze protection valve:
    - 27 • Automatically opening in the event electrical failure causes internal water temperatures to  
28 drop below 35 °F.
    - 29 • 1¼" NPT female threaded top or bottom inlet.
    - 30 • 1" thick removable foam insulation covered by a UV protected ABS plastic jacket.
    - 31 • All joints and openings are factory sealed.
    - 32 • Schedule 40 internal galvanized steel piping and a 9¾" diameter cast iron floor flange.
  - 33 • Electrical system/heat cable:
    - 34 • 120VAC, 60 HZ single phase.
    - 35 • Systems junction box and components are rated for Class 1, Division 2, Groups B, C, and D.
    - 36 • Self-regulating heat tracing cable is controlled by a thermostat that shuts off the heat when  
37 the ambient temperature reaches 55 °F.
    - 38 • Cable is both FM- and CSA-approved.
    - 39 • ANSI compliant, vertical identification sign.
    - 40



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- 1                   • A waterproof test card to record the date and inspector's name for weekly functional testing  
2                   of the unit.  
3                   • Meets ANSI Z358.1-2009.
- 4    AD-1   Area Drains/Deck Drains
- 5                   • Area drain:
- 6                   • Epoxy coated cast iron body.  
7                   • Flashing clamp with integral gravel stop.  
8                   • 12¾" x 12¾" square promenade top.  
9                   • 4" outlet.  
10                  • No hub.  
11                  • Sump receiver.  
12                  • Vandal proof top.
- 13   FD-1   Floor Drains-Finished Area
- 14                  • Floor drain:
- 15                  • Epoxy coated, cast iron body.  
16                  • Anchor flange,  
17                  • Reversible clamping collar with primary and secondary weep holes.  
18                  • Adjustable strainer.  
19                  • 3" outlet.  
20                  • No hub.  
21                  • Vandal proof.  
22                  • Trap primer tapping.  
23                  • 6" diameter.  
24                  • Polished nickel bronze strainer.
- 25   FD-2   Floor Drains-Floor Drain with Stainless-steel Strainers — Finished Area
- 26                  • Floor Drain:
- 27                  • Epoxy coated cast iron body.  
28                  • Anchor flange.  
29                  • Reversible clamping collar with primary and secondary weep holes.  
30                  • 4" outlet.  
31                  • With optional no hub.  
32                  • 4" round cast iron funnel.  
33                  • Vandal proof.  
34                  • Trap primer tapping.  
35                  • 8" diameter.  
36                  • Adjustable round stainless-steel strainer.
- 37



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- 1    RPZBFB      Reduced Pressure Zone Backflow Preventer Assembly
- 2            ● Backflow preventer, reduced pressure zone assembly:
- 3                    ● Lead-free construction.
- 4                    ● 3" FDA epoxy coated cast iron lead-free body and yoke resilient seated gate valves.
- 5                    ● UL/FM outside stem and yoke resilient seated gate valves.
- 6                    ● FDA epoxy coated strainer.
- 7                    ● 2" outlet air gap fitting (piped to nearest floor drain) shall be installed at each cross-
- 8                    connection to prevent back siphonage and backpressure of hazardous materials into the
- 9                    potable water supply.
- 10                  ● The assembly shall consist of a pressure differential relief valve located in a zone between
- 11                  two (2) positive seating check valves.
- 12                  ● Back siphonage protection shall include provision to admit air directly into the reduced
- 13                  pressure zone via a separate channel from the water discharge channel, or directly into the
- 14                  supply pipe via a separate vent.
- 15                  ● The assembly shall include two tightly closing shutoff valves before and after the assembly,
- 16                  test cocks and a protective strainer upstream of the No. 1 shutoff valve.
- 17                  ● The assembly shall meet the requirements of ASSE Standard 1013.
- 18                  ● AWWA Standard C-511-92 CSA B64.4; FCCCHR of USC Manual Section 10.
- 19                  ● Listed by IAPMO (UPC).
- 20                  ● SBCCI (standard plumbing code).
- 21                  ● Temperature Range:
- 22                    ● 33 °F–140 °F continuous.
- 23                    ● 180 °F intermittent, maximum
- 24                  ● Working Pressure:
- 25                    ● 175 psi.
- 26                    ● Degree of hazard present, vertical orientation, frequency of testing, or other installation
- 27                    requirements at discretion of local authority.
- 28    JS-1      Service/Mop Sink—Two Handle Faucet
- 29                  ● Rectangular service/mop sink:
- 30                    ● 18" high x 22" wide x 20¼" deep.
- 31                    ● Faucet on backsplash.
- 32                    ● Enameled cast iron construction porcelain finish.
- 33                    ● 9" high drilled block two (2) holes on 13/16" backsplash.
- 34                    ● Stainless-steel rim guard.
- 35                    ● Wall hanger.
- 36                  ● Wall-mounted, two handle faucet:
- 37                    ● 8" centerset.
- 38                    ● Brass construction.
- 39                    ● Integral stops.
- 40                    ● 3-7/16" spout with atmospheric vacuum breaker and bucket hook, lever handle.



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- 1           ● Rim Guard.
- 2   HB-1   Hose and Supply Boxes-Hose Valve-Bent Nose
- 3           ● Hose valve bend nose stainless-steel lead free with vacuum breaker:
- 4           ● Cartridge-operated hose valve with lock shield bonnet and removable key handle.
- 5           ● Interior wall hose valves of polished chrome finish, chrome-plated rough.
- 6           ● Freeze-proof valve.
- 7   HB-2   Hose and Supply Boxes-Hose Box
- 8           ● Recessed hose box with door and frame hot and cold with vacuum breaker:
- 9           ● Box shall be one-piece cast construction, with plain finish.
- 10          ● Frame and door shall have a prime coat finish.
- 11          ● Door shall have a recessed cam lock operable with the removable key wheel handle on the
- 12          valve.
- 13          ● Valve shall be a replaceable cartridge type with vandal-resistant lock shield bonnet,
- 14          removable loose key wheel handle and screwdriver operated stop, stainless-steel lead free.
- 15          ● Freeze-proof valves required.
- 16   DSP-1   Disposer–Agriculture Laboratory Sink–4” Drain
- 17          ● Garbage disposer:
- 18           ● Meet ASSE 1008 and UL 430 standards, and listed and labeled as defined in NFPA 70, by a
- 19           qualified testing agency, and marked for intended location and application.
- 20           ● Provide reset button, wall switch.
- 21           ● Use corrosion-resistant chamber with jam-resistant, cutlery- or stainless-steel grinder or
- 22           shredder.
- 23           ● Drain outlet shall match disposer model.
- 24           ● Install quick-mounting, stainless-steel sink flange, anti-splash guard, and combination
- 25           cover/stopper.
- 26           ● Provide sound-insulated chamber and stainless-steel outer shell.
- 27          ● Motor:
- 28           ● 115 VAC.
- 29           ● 1725 RPM.
- 30           ● Minimum 3 HP with overload protection.
- 31   DSP-2   Disposer–Break Room Sink
- 32          ● Garbage disposer:
- 33           ● Meet ASSE 1008 and UL 430 standards, and listed and labeled as defined in NFPA 70, by a
- 34           qualified testing agency, and marked for intended location and application.
- 35           ● Provide reset button; wall switch.
- 36           ● Use corrosion-resistant chamber with jam-resistant, cutlery- or stainless-steel grinder or
- 37           shredder.
- 38           ● Provide 1½" outlet.



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- 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

- 10 • Garbage disposer:
  - 11 • Meet ASSE 1008 and UL 430 standards, listed and labeled as defined in NFPA 70, by a
  - 12 qualified testing agency, and marked for intended location and application.
  - 13 • Provide reset button.
  - 14 • Install wall switch.
  - 15 • Use corrosion-resistant chamber with jam-resistant.
  - 16 • Provide cutlery- or stainless-steel grinder or shredder.
  - 17 • Install 1½" outlet.
  - 18 • Use quick-mounting, stainless-steel sink flange.
  - 19 • Install anti-splash guard.
  - 20 • Provide combination cover/stopper.
  - 21 • Provide sound-insulated chamber and stainless-steel outer shell.
- 22 • Motor:
  - 23 • 115 VAC.
  - 24 • 1725 RPM.
  - 25 • 3 HP with overload protection.

26



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DRAFT

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# MECHANICAL REQUIREMENTS

Cargo Facilities Design Standard  
2019 (Draft)



**U.S. Customs and  
Border Protection**



## 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).
- International Energy Conservation Code (IECC).
- 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





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1 pressure relative to the surrounding building areas: toilets, showers, locker rooms, custodial spaces,  
 2 laboratories, and other spaces as required. The air from these spaces shall be exhausted directly outdoors.

3 **Table 18-1. Indoor Design Conditions from the GSA PBS P-100**

Type of Area	Summer DB <sup>1,3</sup>	RH <sup>2,3,4</sup>	Winter DB <sup>1,3</sup>	RH <sup>2,3,4</sup>
<b>General Office <sup>13</sup></b>	24 (75)		22 (72)	
<b>Automatic data processing (ADP), computer and information technology equipment rooms</b>	22 (72)	45	22 (72)	30
<b>Corridors <sup>13</sup></b>	24 (75)		22 (72)	
<b>Building lobbies and atriums <sup>10,13</sup></b>	24 (75)		22 (72)	
<b>Toilets <sup>13</sup></b>	24 (75)		22 (72)	
<b>Locker rooms</b>	26 (78)		21 (70)	
<b>Electrical closets</b>	26 (78)		13 (55)	
<b>Mechanical spaces</b>	35 (95) <sup>5</sup>		13 (55)	
<b>Electrical switchgear</b>	35 (95) <sup>5</sup>		13 (55)	
<b>Elevator machine room <sup>10</sup></b>	26 (78)		13 (55)	
<b>Emergency generator room</b>	40 (104)		18 (65)	
<b>Transformer vaults</b>	40 (104)			
<b>Stairwells</b>	(none)		18 (65)	
<b>Communications/telecommunications frame room <sup>7</sup></b>	24 (75)	45	22 (72)	30 <sup>12</sup>
<b>Storage room</b>	30 (85)		18 (65)	
<b>Conference room <sup>11,13</sup></b>	24 (75)		22 (72)	

4 **Table 18-1. Notes**

- 5 1. Dry bulb (DB) temperatures are degrees Celsius (Fahrenheit), to be maintained at +/-1°C (+/-2°F) of setpoint.
- 6 2. Unless specifically noted, minimum permissible relative humidity in conditioned areas is 30% and maximum
- 7 permissible relative humidity is 60%.
- 8 3. Dry bulb and relative humidity are to be maintained at 150 mm (6 in.) to 1,800 mm (6 ft.) above the floor.
- 9 4. Relative humidity should be maintained within +/- 5 percent RH of setpoint in spaces.
- 10 5. Maximum temperature. The space is to be mechanically cooled if necessary.
- 11 6. Room shall not exceed temperature with generator running.
- 12 7. Shall comply with Electronic Industry Alliance/Telecommunications Industry Alliance (EIA/TIA) Standard
- 13 569.
- 14 8. Minimum DB temperature in the building shall be 13°C (55°F), even when unoccupied.
- 15 9. The A/E to confirm ADP equipment manufacturer's requirements as more stringent. Provide in-room display
- 16 and monitor device (such as wall-mounted temperature and humidity chart recorder).
- 17 10. System shall be designed for process cooling. Cooling system shall be a dedicated independent system.
- 18 11. Provide independent temperature control.
- 19 12. Minimum relative humidity requirements may be omitted in moderate southern climate zones, upon the
- 20 approval of local GSA representatives.
- 21 13. The values shown are for DB temperatures in occupied spaces, when the air speed is less than 0.2 m/s (40
- 22 ft/min) and when the net thermal radiant exchange between the occupants and surrounding surfaces is
- 23 negligible. Otherwise, the values shown are for operative temperature as defined in ASHRAE Standard 55.



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### 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.



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- 1     • Lighting. Light fixtures in an agriculture laboratory fume hood typically come in vapor-proof style.  
2     Vapor-proof light fixtures are usually fluorescent, installed outside the hood liner, and protected from  
3     the hood interior by a transparent, impact-resistant glass shield.
- 4     • Service fixtures. Utility services may include connections to gases, air, water, and vacuum. If service  
5     fixtures are required, they should be installed to allow the connection of service supply lines either on  
6     the hood itself or the work surface supporting the hood. The plumbing tubing and valves should be  
7     corrosion resistant, if located inside the hood, and should be of the proper material to satisfy local code  
8     requirements.
- 9     • Electrical receptacles. If electrical receptacles are required, they should be located on the hood  
10    exterior, away from the corrosive effects of the fumes inside the hood structure. Provisions should be  
11    made so that all electrical wiring is isolated and physically separated from vapors handled within the  
12    hood.
- 13    • Americans with Disabilities Act (ADA) Requirements. Fume hoods and accessories must be available  
14    with features that meet the requirements of the ADA. Switches, controls, and written instructions  
15    should be located where they can be seen and reached by a seated person. The ADA Standards for  
16    Accessible Design specifies that forward reach should be a maximum of 48 inches high and side reach  
17    a maximum of 54 inches high. To allow a person in a wheelchair to work comfortably, the ADA also  
18    specifies that work surface height should be from 28 to 34 inches above the floor and knee clearance  
19    underneath should be at least 27" high, 30" wide, and 19" deep. Audible alarms must have an  
20    intensity and frequency that can attract the attention of individuals who have partial hearing loss.  
21    The ADA standard states that audible emergency alarms shall produce a sound that exceeds the  
22    prevailing equivalent sound level in the room or space by at least 15 dB or exceeds any maximum  
23    sound level with a duration of 60 seconds by 5 dB, whichever is louder.
- 24    • Ventilation system components and accessories. The laboratory hood is just one component of a  
25    complete fume ventilation system. At the same time a hood is selected, a blower, ductwork, base  
26    cabinet, and work surface must also be selected. Air supply must be determined as well.
- 27    • Remote blowers. Of all the additional components needed, the blower is the most crucial to the  
28    performance of the hood. By creating suction within the ductwork, blowers draw air from the  
29    laboratory room, through the hood, and out the duct system. Fume hood installations utilizing remote  
30    blowers are the most common type. Centrifugal type blowers are popular because they are more  
31    efficient and less noisy than others. The exhaust blower is often positioned in a penthouse or on the  
32    building's exterior, usually on the roof, where noise is less noticeable.
- 33    • Blower sizing. To provide the optimum face velocity and air volume for the laboratory hood, the blower  
34    must be sized properly. Although horsepower and revolutions per minute (RPM) are important blower  
35    specifications, blower selection should be based on the air volume the hood will exhaust and the total  
36    static pressure loss of the entire system.
- 37    • Air volume. The air volume (or volumetric rate) passing through the hood is generally equal to the  
38    area of the sash opening multiplied by the average velocity desired. For example, if 100 feet per  
39    minute (fpm) is required and the hood has a sash opening of 7.5 square feet, then the hood's air  
40    volume is 750 (7.5 x 100) cubic feet per minute (CFM).
- 41    • Ductwork. Ductwork includes fume pipe, male and female couplings, elbows, reducers, and exhaust  
42    discharge stacks (weathercaps). Round diameter duct made of rigid materials offers the least static  
43    resistance. Like the liner material of a laboratory hood, duct material must be resistant to the fumes  
44    exhausted through it. Ductwork made of unplasticized polyvinyl chloride (PVC) is a popular choice



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- 1 because it is rigid, highly resistant to both acid and solvent vapors, and, because it is extruded, comes  
 2 in round diameters.
- 3 ● Base cabinets. Agriculture laboratory hoods are designed to rest on a bench-high base stand or cabinet  
 4 with a work surface. Base cabinet is used to store alcohol, bleach, and other solvents.
- 5 C. Other
- 6 ● Canine facilities. See general requirements on selecting and sizing the system. Do not recirculate the  
 7 return air.
  - 8 ● Detention. See general requirements on selecting and sizing the system.
  - 9 ● Laboratory. See general requirements on selecting and sizing the system. Do not recirculate the  
 10 return air. Provide exhaust hoods where chemicals are mixed or used.

### 18.6 COMMISSIONING

12 The National Conference on Building Commissioning has established an official definition of “Total Building  
 13 Commissioning as follows:

14 “The systematic process of assuring by verification and documentation, from the design phase to a minimum  
 15 of one year after construction, that all facility systems perform interactively in accordance with the design  
 16 documentation and intent, and in accordance with the owner’s operational needs, including preparation of  
 17 operation personnel”.

18 All CBP projects shall use The Total Building Commissioning Process. The Total Building Commissioning  
 19 Process shall be performed by an independent third-party commissioning authority under direct contract to  
 20 the owner with ACG AABC (Cx) certification, Association of Energy Engineers (AEE) (CBCP) certification,  
 21 ASHRAE (CPMP) certification, or other industry-wide accepted equivalent certification. The Commissioning  
 22 Authority shall have familiarity with the CBP Guiding Principles.

23 The commissioning authority shall utilize the most recent commissioning process outlined in the GSA’s  
 24 Building Commissioning Guide, which describes the building commissioning philosophy, outlines the building  
 25 commissioning process from the planning stage through post-construction, and provides a sample scope of  
 26 work the commissioning of facilities.

### 18.7 PRODUCTS

#### 18.7.1 Grilles, Diffusers, Registers, and Controls

29 The following sections list definitions of the various types of grilles diffusers and controls anticipated to be  
 30 installed in cargo facilities. Each product has been assigned a reference number, a short descriptive name, and  
 31 a full description of the required features. These definitions are tied to the short descriptive name found in  
 32 Chapter 22, Room Data Sheets.

##### S-1 Perforated Plate Diffuser

- 34 ● Perforated square ceiling supply air diffuser shall be provided with steel or aluminum flush face with  
 35 adjustable four-way air pattern controls. Diffuser shall have a perforated face with 3/16-inch diameter  
 36 holes on ¼-inch staggered centers and no less than 50% free area. The back pan shall be one-piece



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1 stamped heavy gauge steel with 1-1/8-inch neck depth for supply air duct connection. Diffuser frame  
2 shall be a mounting type required to match ceiling type. Pattern controllers in the supply models shall  
3 be mounted on the back of the perforated face and shall be field adjustable. The perforated face shall  
4 be easily unlatchable from the backpan to facilitate adjustment of the face pattern controller. Diffuser  
5 shall be white finish with a baked enamel paint. Perforated face size shall be as indicated on  
6 schedules.

- 7 • The manufacturer shall provide published airflow and sound performance data tested in accordance  
8 with ANSI/ASHRAE Standard 70.

### 9 S-2 Square Ceiling Diffuser

- 10 • Square ceiling diffuser shall be steel or aluminum with three cones, which give a uniform face size and  
11 appearance when different neck sizes are used. All cones shall be one-piece precision die-stamped with  
12 no mitered corners. The two inner cones shall be constructed as a single, removable inner cone  
13 assembly for easy installation and cleaning. The inner cone assembly shall have a hole with removable  
14 plug in the center to allow quick adjustment of an optional inlet damper without removing the inner  
15 core assembly. The finish shall be white baked on enamel. Diffuser frame type shall be mounting type  
16 required to match ceiling type.
- 17 • The manufacturer shall provide published airflow and sound performance data for the square diffuser  
18 tested in accordance with ANSI/ASHRAE Standard 70.

### 19 S-3 Supply Grille

- 20 • Supply grilles shall be steel, or aluminum double deflection or single deflection of the sizes and  
21 mounting types shown on the plans and outlet schedule. The deflection blades shall be available  
22 parallel to the long or short dimension of the grille. Construction shall be of steel with a 1-1/4" wide  
23 border on all sides. Screw holes shall be countersunk for a neat appearance. Corners on steel units  
24 shall be welded with full penetration resistance welds. Corners on aluminum units shall be  
25 interlocked at frame and mechanically staked to form a rigid frame.
- 26 • Deflection blades shall be contoured to a specifically designed and tested cross-section to meet  
27 published test performance data. Blades shall be spaced on 3/4" centers. Blades shall have friction  
28 pivots on both ends to allow individual blade adjustment without loosening or rattling. Plastic blade  
29 pivots are not acceptable. The grille finish shall be white baked enamel
- 30 • The manufacturer shall provide published airflow and sound performance data for the grille. The  
31 grille shall be tested in accordance with ANSI/ASHRAE Standard 70.

### 32 S-4 Linear Slot Ceiling Diffuser

- 33 • Linear diffusers shall provide supply air with 1/2-, 3/4-, 1-, and 1-1/2- inch slot spacing of the sizes and  
34 mounting types shown on the plans and outlet schedule. Linear slot diffusers shall be available in  
35 standard one-piece lengths up to 6 feet and 1 to 8 discharge slots. Diffuser lengths greater than 6 feet  
36 shall be furnished in multiple sections and will be joined together end-to-end with alignment pins to  
37 form a continuous slot appearance.



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- 1     • All alignment components shall be provided by the manufacturer. The frame and support bars shall be  
2     constructed of heavy gauge extruded aluminum. The pattern controller shall be an aerodynamically  
3     curved shaped steel deflector capable of 180-degree pattern adjustment from the face of the diffuser  
4     and shall allow dampering, if required. Maximum pattern controller length shall be furnished in  
5     multiple sections.
- 6     • The finish shall be white on the face and black on the pattern controllers. Heavy gauge extruded  
7     aluminum end borders, end caps and mitered corner components manufactured by the diffuser  
8     manufacturer shall be available to close off the ends of the diffusers. Diffuser air plenums shall be  
9     manufactured by the same manufacturer as the linear slot diffusers.
- 10    • The manufacturer shall provide published airflow and sound performance data for the linear slot  
11    diffuser. The diffuser shall be tested in accordance with ANSI/ASHRAE Standard 70.

### 12 S-5 Security Grille

- 13    • Security grilles of sizes and mounting types are shown on the plans and outlet schedule. Grilles shall  
14    have a 3/16-inch thick steel face with 5/16-inch diameter holes on 7/16-inch staggered centers. The  
15    sleeve shall be 3/16-inch thick and shall be stitch welded to the face and along the entire length of all  
16    sleeve seams. Grille to include 1-1/2 x 1-1/2 x 3/16-inch steel angle mill finished iron frame shipped  
17    loose for field welding to grille sleeve at back of wall penetration.
- 18    • The grille finish shall be white. The manufacturer shall provide published airflow and sound  
19    performance data for the grille. The grille shall be tested in accordance with ANSI/ASHRAE Standard  
20    70.

### 21 S-6 Security Diffuser

- 22    • The supply diffuser shall consist of an outer frame assembly of the sizes and mounting types shown on  
23    the plans and outlet schedule. A square inlet shall be integral part of the frame assembly and a  
24    transition piece shall be available to facilitate attachment of round duct. An inner core assembly  
25    consisting of fixed deflection louvers shall be available in 1-, 2-, 3-, or 4-way horizontal discharge  
26    patterns. The inner core assembly shall be removable in field without tools for easy installation,  
27    cleaning, or damper adjustment. All units shall be constructed of heavy gauge steel. All units shall be  
28    covered with a 12-gauge steel face with 13/16-inch square holes on 1-inch centers. All units will be  
29    provided with screw holes in the face for surface mounting. Tamper proof screws to be provided  
30    according to structural requirements.
- 31    • The grille finish shall be white. The manufacturer shall provide published airflow and sound  
32    performance data for the grille. The grille shall be tested in accordance with ANSI/ASHRAE Standard  
33    70.

### 34 RR-1 Perforated Return Air Grille

- 35    • Perforated square return air ceiling grille shall be flush face steel or aluminum similar in appearance  
36    to the perforated supply air diffuser. The return models shall have the same face and border  
37    construction as the supply models. Grille shall have a perforated face with 3/16-inch diameter holes on  
38    ¼ inch staggered centers and no less than 50 percent free area. The back pan shall be one-piece  
39    stamped heavy gauge steel with 1-1/8-inch neck depth. Return air grilles to be sized for maximum NC  
40    30 in offices and NC 35 in other areas. Grille frame shall be mounting type required to match ceiling



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1 type. The perforated face shall be easily unlatchable from the backpan. Diffuser shall have a white  
2 finish with baked enamel paint. Perforated face size shall be as indicated on schedules.

- 3 • The manufacturer shall provide published airflow and sound performance data tested in accordance  
4 with ANSI/ASHRAE Standard 70.

### 5 RR-2 Return Grille

6 • Return grilles shall be single deflection steel or aluminum of the sizes and mounting types shown on  
7 the plans and outlet schedule. The deflection blades shall be available parallel to the long or short  
8 dimension of the grille. Construction shall be of steel with a 1-1/4" wide border on all sides. Screw  
9 holes shall be countersunk for a neat appearance. Corners shall be welded with full penetration  
10 resistance welds.

11 • Deflection blades shall be contoured to a specifically designed and tested cross-section to meet  
12 published test performance data. Blades shall be firmly held in place by mullions from behind the  
13 grille and fixed in place by crimping or welding. Blades shall be spaced on 3/4-inch centers. Blade  
14 deflection angles shall be available at 00 or 350.

15 • The grille finish shall be white baked enamel.

16 • The manufacturer shall provide published airflow and sound performance data for the grille. The  
17 grille shall be tested in accordance with ANSI/ASHRAE Standard 70.

### 18 RR-3 Security Return Grille

19 • Security grille of sizes and mounting type shall be as shown on the plans and outlet schedule. Grilles  
20 shall have a 3/16-inch thick steel face with 5/16-inch diameter holes on 7/16-inch staggered centers.  
21 The sleeve shall be 3/16-inch thick and shall be stitch welded to the face and along the entire length of  
22 all sleeve seams. Grille to include 1-1/2 x 1-1/2 x 3/16-inch steel angle mill finished iron frame shipped  
23 loose for field welding to grille sleeve at back of wall penetration.

24 • The grille finish shall be white. The manufacturer shall provide published airflow and sound  
25 performance data for the grille. The grille shall be tested in accordance with ANSI/ASHRAE Standard  
26 70.

### 27 RR-4 Security Exhaust Grille

28 • Exhaust grille, 12-gauge steel lattice face with 13/16-inch square holes on 1-inch centers. Lattice face  
29 shall be white baked on enamel. Units shall be mounted to exhaust the duct flange and ceiling using  
30 tamper proof security screws to meet structural requirements. Grill face shall be white baked enamel.

## 31 18.7.2 Controls

### 32 Dedicated Room Temperature control

33 Building room/spaces that are specifically required shall have a dedicated individual room temperature  
34 control.



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### 1 Zone Temperature Control

2 Building rooms/spaces that are not specifically required to be provided with a dedicated individual room  
3 temperature control as indicated on the room data sheet may be included as part of a zone temperature  
4 control. A zone temperature control is defined as providing a single thermostatic control to serve a zone of two  
5 or more rooms/spaces with similar temperature requirements. Guidelines for combining room/spaces onto a  
6 single zone temperature control are as follows:

- 7 ● Interior temperature control zones for an open office area not to exceed 1500 square feet per zone.
- 8 ● Temperature control zone for not more than three interior closed offices/spaces or perimeter  
9 offices/spaces with similar exposure and similar load profile characteristics.
- 10 ● Each corner office to have a dedicated individual room temperature control.
- 11 ● Perimeter thermostatic control zones not to exceed 300 square feet or one column bay width and shall  
12 be no more than 15 feet from an outdoor wall along column exposure.

### 13 T-1 Flush Mounted Wall Temperature Sensor:

- 14 ● Provide T-1 sensors in rooms specifically indicated on data sheets. The flush mounted temperature  
15 sensor is a device that measures air temperature, via a temperature sensing element, thermally  
16 bonded to a metal electrical box cover. The sensor's resistance varies with the actual room  
17 temperature being measured. It incorporates a temperature-sensing element — 10K Ohm Type II  
18 thermistor, 100K Ohm thermistor, or 1000 Ohm resistance temperature detector (RTD) — behind a  
19 blank, stainless-steel switch cover plate. The sensor is designed for those applications in which a  
20 protruding room temperature sensor is not acceptable. A temperature sensor shall be mounted to a 2"  
21 x 4" electrical box with tamper proof screws.  
22

23



# ELECTRICAL REQUIREMENTS

Cargo Facilities Design Standard  
2019 (Draft)



**U.S. Customs and  
Border Protection**



## 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).
- National Electrical Safety Code (NESC).
- 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% spare circuit capacity for future considerations. All distribution panels should have 35% spare ampacity and 25% spare circuit capacity. All branch circuit panel boards should have 50% spare ampacity and 25% spare circuit capacity, while panelboards serving lighting only should have 25% spare ampacity and 25% spare 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.



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### 1 19.2.2 Critical Power Distribution System

2 Critical power to the facility shall be provided with an uninterruptible power supply (UPS) system with the  
3 battery load fed (in charging mode) from the essential MDP. In the event of a commercial utility outage, E/G  
4 start-up is automatically initiated and the ATS switches from commercial utility to E/G. During the E/G startup  
5 period, and until the E/G is fully on line (within 15 seconds), the UPS ensures that power is supplied to the  
6 critical MDP. If the E/G does not fully engage, the UPS should continue to supply the critical loads for up to 90  
7 minutes, allowing time for the problem to be corrected or the system to be shut-down in an orderly manner. The  
8 critical loads include all security controls, heating, ventilation, and air-conditioning (HVAC) controls supporting  
9 critical areas, emergency lighting, fire alarm and detection panels, and other mission critical systems.

10 The UPS sizing shall be based on the full capacity of the critical equipment loads, including estimated loads for  
11 planned future expansion. A dedicated UPS shall be provided for the local area network (LAN) and  
12 supplemental local area network (SLAN) rooms. The UPS shall be mounted on a rack (roughly 2' high x 2' wide  
13 x 3' deep).

14 Systems typically on critical power include the following:

- 15 ● CBP designated computer systems (including servers and workstations).
- 16 ● Telephone and communications systems (including routers and switches).
- 17 ● Security system controls.
- 18 ● The LAN room equipment.
- 19 ● The SLAN room equipment.
- 20 ● Passenger processing and lighting.
- 21 ● Detention controls.
- 22 ● Closed circuit television (CCTV) cameras.
- 23 ● Command and Control Center (CCC) power and lighting.
- 24 ● Site lighting.
- 25 ● Dispatch equipment.
- 26 ● Temporary vault systems.
- 27 ● Fire pump.
- 28 ● Fire alarm.
- 29 ● Egress signs.
- 30 ● Emergency lighting.

### 31 19.2.3 Service Disconnect Means

32 The secondary side of the service transformer should terminate, in accordance with the NEC, in a separately  
33 mounted circuit breaker. The service disconnect is also permitted to be a separately mounted fusible safety  
34 switch or a fusible panel board with a main fusible switch.

### 35 19.2.4 Ground Fault Interruption Protection

36 Ground fault interruption protection shall be provided in accordance with the NEC, and additionally, provide  
37 single-phase voltage loss protection where required by local codes. Ground fault interruption protection on the  
38 MDP should include a main circuit breaker with ground fault interruption protection.



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### 1 19.2.5 Site Power Distribution

- 2 Power to outward buildings or structures shall be via underground duct banks to local power panels or load  
3 centers. Manholes or handholes shall be used for any duct bank exceeding 300 feet. Manhole and handhole  
4 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.



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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.



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### 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.



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- 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.



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The technology of light sources appropriate for exterior application is rapidly changing. Current research is establishing reliable new criteria for visual acuity.<sup>1</sup> 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.

- IESNA Lighting Handbook, Ninth Edition.
- RP-8-00 Roadway Lighting.
- RP-20-98 Lighting for Parking Facilities.
- RP-33-99 Lighting for Exterior Environments.
- TM-15-07 (revised) Luminaire Classification System for Outdoor Luminaires.

### 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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<sup>1</sup> 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.





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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 19.1. Exterior Lighting Requirements**

Lighting Zone	Horizontal Illuminance Avg. fc (lux)†	Horizontal Uniformity Avg. : Min.	Vertical Illuminance* Min. fc (lux)†
Dock	3 (32)	6:1	N/A
Building Perimeter	4 (43)	4:1	2 (22)
Parking	2 (22)	4:1	1 (11)
Perimeter Fence**	1(1.08)	N/A	N/A

\* 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



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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<sup>2</sup> 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.<sup>3</sup>

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.<sup>4</sup> A CRI of 85 or higher is critical to visual acuity with time constraints such as at inspection areas.<sup>5</sup>

### 19.6.9 Interior Lighting

The entire lighting system shall comply with the latest minimum ASHRAE 90.1 Standard.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> Both sunlight and halogen incandescent are considered to have a CRI of 100%.

<sup>5</sup> 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.



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### Daylighting

Daylighting typically refers two separate concepts: the ability of occupants to see outdoors and the displacement of electric lighting due to the 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 photo sensors 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



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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.



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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.



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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 4,000° 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 4,000° 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 4,000° 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 4,000° 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 4,000° 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 4,000° 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 4,000° 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 4,000° 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 4,000° Kelvin, 80+ CRI. Fixtures should have dimming capability.





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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 4,000° 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 4,000 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 4,000° 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 fixtures should deliver 4,000° 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 shall deliver 4,000° 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 shall deliver 4,000° 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 4,000° 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 4,000° 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 4,000° Kelvin. The LED fixture should deliver 4,000° 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 4,000° Kelvin.



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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.



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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.



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Border Protection**

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# DATA AND VOICE REQUIREMENTS

Cargo Facilities Design Standard  
2019 (Draft)



**U.S. Customs and  
Border Protection**



## 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.



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1 The CFO shall support CBP's local area network (LAN) topology, including adequate electrical power,  
2 uninterruptible power supply (UPS), and proper HVAC, to ensure optimum equipment performance. The CFO  
3 shall provide systems infrastructure for the data processing, and voice and tactical communications systems,  
4 including entrance raceways, backboards, punch down blocks, wire way, conduits, data and voice jacks  
5 throughout the facility, power panels, and receptacles. The CFO shall also provide dedicated secure conduit, at  
6 a minimum, for all CBP cabling through public space. Sharing of conduit with CFO or other non-CBP entities  
7 is not permitted.

### 8 **20.3 COMPUTER AND VOICE COMMUNICATIONS SYSTEMS**

9 The network generally includes file servers, voice over internet protocol (VOIP), personal computers, printers,  
10 additional computer peripherals, and any other necessary hardware and software. The CFO shall provide all  
11 necessary infrastructure to support the chosen topology, including standard electrical power, UPS, and HVAC  
12 to ensure optimum equipment performance. All required cabling and conduit shall be furnished and installed  
13 by the CFO. The procurement, installation, and retirement of any technology equipment shall be coordinated  
14 and approved by OIT and the Field Operation Facilities Program Management Office Project Manager (FOF  
15 PMO PM).

#### 16 **20.3.1 CBP Local Area Network**

17 The government uses the CBP LAN to retrieve, report, and manage information. Access is through a network  
18 of computer peripherals located in various operational areas of the CBP security areas (CSA). Systems hardware  
19 is located in the LAN room. A specific room layout and hardware requirements will be furnished by CBP for  
20 each facility. Dedicated data circuits connect this room to the off-site wide area network (WAN). The CFO shall  
21 provide and install adequate cabling and conduit, as specified by the OIT, to ensure the proper operation and  
22 security of this system.

23 CBP areas that are networked together include, but may not be limited to:

- 24 ● LAN room.
- 25 ● Supplemental local area network (SLAN) room.
- 26 ● Intermediate distribution frame (IDF) room(s).
- 27 ● Processing booths (where applicable.)
- 28 ● Secondary processing area(s).
- 29 ● CBP operational support area.

30 Wiring access to many areas can only be achieved through properly placed and sized conduit. Planners shall  
31 consult with OIT in the early stages of project development. The FOF PMO PM will coordinate these  
32 requirements with OIT. The installation of proper cabling and conduit is significant in open office configurations  
33 because a number of desks and/or officer workstations are not located adjacent to a wall surface. CBP wiring  
34 standard is one voice drop, two data drops, and one electrical quadruplex outlet for each desk and/or workstation  
35 location. Each networked printer shall have two data drops and one quadruplex electrical outlet. Each FAX  
36 machine shall have one voice drop and one duplex electrical outlet. Private offices should have a minimum of  
37 one outlet, one voice drop, and one data drop on each wall to provide alternative furniture configurations. The  
38 OIT will assist in IT planning to ensure that adequate cable and conduit is provided.



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### 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.





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1 The OIT will make all final decisions regarding the facility needs as they relate to these specifications; therefore,  
2 it is critical for the designer to coordinate with OIT early in the planning phase.

### 3 **20.5 POWER REQUIREMENTS**

#### 4 **20.5.1 Amperage and Voltage**

5 The CFO shall provide adequate power (voltage and amperage) to ensure the proper operation of all equipment  
6 in the CSA.

#### 7 **20.5.2 Power Supply**

8 All facility data and communications systems elements shall be considered critical and must be provided with  
9 back-up power source.

10 The CFO shall provide an isolated power supply for the LAN, SLAN, and telecommunications systems with  
11 emergency generator backup capable of supporting the initial power load of all equipment in the LAN, SLAN,  
12 and IDF rooms. In addition, the CSA shall incorporate a seamless cutover mechanism switch to the facility's  
13 main back-up power generator to fully support CBP operations in the event of a power loss or interruption.

### 14 **20.6 VOICE SYSTEMS**

15 Due to varying requirements among cargo facilities, OIT will design a telecommunications (voice) system and  
16 furnish infrastructure criteria for each site based on user requirements. For security purposes, the CBP  
17 telecommunications system shall be a complete standalone system with the CFO retaining no connectivity,  
18 control, or administrative rights over the system. Telecommunications systems are housed in close proximity to  
19 the technology equipment and have specific power (including UPS) and HVAC requirements. The CFO shall  
20 provide all power, cabling, and conduit to support the chosen configuration. The OIT will develop specifications  
21 for each facility during project planning. The CFO shall consult with OIT prior to equipment/systems selection.

### 22 **20.7 WIRELESS COMMUNICATIONS**

23 This section contains the current OIT wireless installation requirements for new or renovated CBP facilities.  
24 As CBP moves forward with the use of wireless LAN (WLAN), CBP will be able to reduce cabling requirements  
25 in new facilities.

#### 26 **Cargo Facility Operator's Responsibilities**

27 The CFO shall provide all the necessary construction and infrastructure to support the implementation of  
28 wireless technology into the CBP facility. This includes, but is not limited to:

- 29 ● Cabling of wireless access points (WAP).
- 30 ● Power to the WAP, as needed and determined by OIT.
- 31 ● Installation of the WAP.

32

#### 34 **Office of Information Technology's Responsibilities**



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1 The OIT is responsible for all network and wireless design as well as network equipment associated with the  
2 implementation of the CBP wireless network at the CSA. This includes, but is not limited to:

- 3 ● Conducting three wireless surveys.
- 4 ● Providing network designs for wireless network.
- 5 ● Purchasing and installing wireless network equipment (with costs to be reimbursed by the CFO).
- 6 ● Providing connectivity from patch panels to CBP network.
- 7 ● Testing wireless network.
- 8 ● Ensuring wireless security configurations.

### 9 Requirements

10 Wireless devices within the CSA are provided network access through the WAPs. The final locations of the WAP  
11 shall be determined after OIT performs an active wireless survey. The architect/engineer (A/E) shall provide  
12 the following specification within their design:

#### 13 1. Quantity of WAPs

14 The CFO shall configure the wireless infrastructure based on the amount of square feet and/or the  
15 number of connections to be supported. CBP's intention is to support wireless communication  
16 throughout the facility with the exception of identified secure/classified areas. The number of WAPs  
17 required is as follows:

- 18 ● One WAP supports 3,000 square feet or up to 25 connections, whichever solution provides the  
19 most WAPs. The CFO should configure for more not less; this configuration can be reduced  
20 during the design and wireless surveys of the project.
- 21 ● The proposed number of the WAPs shall be provided to OIT at the 30% site design review.

#### 22 2. Cabling

23 The OIT provides a predictive survey for the locations at the 30% design reviews. The final locations  
24 cannot be determined until the majority of the walls are in place and OIT conducts an active survey.  
25 The OIT provides cabling actions in the cable statement of work (SOW) for the project. All SOW  
26 conditions and provisions listed in the SOW document are relevant to the WAP cabling, including the  
27 cabling testing and validation.

28 For each WAP, CFO shall complete the following:

- 29 ● Install two Category 6-A UTP Plenum-rated yellow-sheathed cables.
- 30 ● Terminate each cable on CFO-furnished duplex data outlets above raised ceiling and current or new  
31 Category 6-A Patch Panels in LAN room or IDF, whichever is applicable. All patch panels should  
32 account for a 20% growth factor.
- 33 ● Use cable runs of less than 300 feet.
- 34 ● Provide 7-foot yellow patch cables for each.

#### 36 3. Power



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1 For most locations, CBP's LAN switch provides power for the WAPs. Occasionally, depending on  
2 distance or other unknown factors, CFO shall provide a circuit to meet the power draw requirements of  
3 the WAPs. Those instances shall be determined during the 30%, 60%, and 90% design reviews.

### 4 4. Installation of WAPs

5 The CFO shall be responsible for installing the WAPs into the fixed ceiling.

### 6 Design

7 The OIT is responsible for all aspects of the wireless network design for the CSA. The OIT will follow its  
8 processes in network and wireless design. The OIT will provide the A/E design team with applicable and timely  
9 information for the CFO to complete the requirements without affecting the construction schedule.

10 As part of the design, OIT will conduct surveys; two of the surveys will be conducted on-site during specific  
11 stages of the construction.

### 12 Predictive Survey –30% Design Review

- 13 ● To be completed when plans exist, but construction has not yet started.
- 14 ● To obtain a budgetary environment for WLAN-related hardware and cabling.

### 15 Passive Survey – On-site during construction

- 16 ● Perform with a listen-only mode.
- 17 ● Identify rogues.
- 18 ● Locate radio frequency (RF) trouble zones quickly.
- 19 ● Validate final RF setting.
- 20 ● Perform initial surveys.

### 21 Active Survey

- 22 ● Basic Service Set Identifier (BSSID) Method: this method locks a client into an access point (AP)'s radio  
23 media access control (MAC) address and prevents the client from roaming.
- 24 ● Service Set Identifier (SSID) Method: The SSID is more commonly used for post-deployment scenarios  
25 and for multiple AP surveys. This method enables the survey client to associate to an SSID where the  
26 client roams between multiple APs.

### 27 Implementation

28 The OIT will be responsible for ordering, implementing, and installing the wireless network, except for the WAP  
29 installations within the fixed ceiling. The CFO shall provide the diagram and final layout of the WAPs to OIT  
30 prior to network activation. The CFO shall indicate on the plans the specific MAC address and locations of the  
31 WAPs.

32 The OIT will also provide the specifications and requirements for wireless equipment procurement and  
33 installation to the CFO. During the design phase, OIT will determine network power requirements, the number



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1 of CFO-provided communications racks, and the LAN/IDF layouts. All these items shall be installed prior to the  
2 LAN room readiness check.

### 3 20.8 TACTICAL COMMUNICATIONS

4 Tactical communications equipment requirements, including radios, shall be coordinated with CBP. The  
5 location of tactical communications antennas for facilities shall be coordinated with CBP and local  
6 municipalities. Tactical communications equipment and installation are included among items to be procured  
7 by CBP and reimbursed by the CFO.

### 8 20.9 INFRASTRUCTURE REQUIREMENTS

9 The IT components shall be industrial quality with proven functional designs and have documented  
10 performance data collected from similar applications in continuous operation for a minimum of one year. Data  
11 cabling and wiring must pass industry standard testing and proof of successful testing shall be submitted to  
12 OIT for acceptance. Any installation OIT determines could be accessed by unauthorized persons shall be tamper-  
13 protected by a CBP-approved method.

#### 14 20.9.1 Local Area Network Room

15 The LAN room combines voice, data, and other systems into one area within the facility. The LAN room shall  
16 accommodate a minimum of four full-size lockable 19" racks for the LAN equipment. The size depends on the  
17 technology, both hardware and software, chosen for the location and expected future needs. The room shall  
18 accommodate the telephone system, communication system cabling terminus, routers, switches, and other  
19 system equipment.

20 The LAN room should be located as centrally as possible in relation to the areas served. The LAN room shall  
21 not be located on an exterior wall of the CSA. Equipment rooms and closets in buildings with more than one  
22 level should be stacked to reduce the number of bends in vertical distribution pathways. Minimum room size  
23 shall be 180 sq. ft; it should accommodate the identified equipment and have room for expansion. These rooms  
24 shall not be collocated with, or adjacent to, spaces producing electromagnetic frequencies, such as transformers,  
25 emergency generators, or microwave communications. After a 300 ft conduit run, an IDF shall be added or fiber  
26 connections shall be used to connect to the LAN room. The LAN rooms are connected to an IDF with fiber  
27 connections.

28 The LAN rooms shall be separate from all other tenants and/or agencies. Co-location with non-DHS/CBP  
29 entities is not permitted. The room shall be constructed in accordance with the current CBP Security Policy and  
30 Procedures Handbook (SPPH).

31 The walls designated for the telephone equipment and wall-mounted equipment shall be covered with 8' high x  
32 4' wide x ¾" thick sheets of plywood and painted with fire retardant paint. The preferred floor finish shall be  
33 resilient vinyl tile, but a raised floor with an anti-static floor finish may also be considered. Ceilings shall be  
34 open to the slab above. A dedicated HVAC service shall be sized for the equipment load in these rooms and  
35 provide 24-hour temperature and humidity control to maintain conditions compatible with the computer and  
36 telephone equipment manufacturers' recommendations.

37 Local Area Network Room Power Requirements



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1 The CFO shall provide dedicated, line-isolated, quad, and/or dual filtered electrical outlets. The number of  
2 required outlets depends on the equipment installed in the room. At a minimum, the LAN room shall have two  
3 dedicated line-isolated quad electrical outlets on each wall 18" above the finished floor. A separate power panel  
4 with a master switch and four to five circuits shall be provided. The CSA shall have a power line conditioner in  
5 each panel that provides less than one cycle voltage regulation and a transit voltage surge suppressor (TVSS).  
6 Grounding, lightning protection, labeling, and conduit distribution shall be installed in accordance with the  
7 Federal Information Processing Standards (FIPS) 187 and 195. Telecommunications Building Wiring Standards  
8 (TIA/EIA), or applicable local standards. In addition to the required dedicated electrical circuits, the LAN room  
9 shall have an adequate number of voice and data drops, per local code.

10 A separate power distribution unit with expansion capability shall supply the LAN room and shall be placed on  
11 a separate UPS system. Outlets within the LAN room must be wired to the UPS system to maintain continuous  
12 and stable equipment power. The LAN room should be located away from any space producing an  
13 electromagnetic frequency, such as a transformer, an emergency power generator, or microwave  
14 communications. Additional equipment circuiting requirements shall be coordinated with OIT during the design  
15 and planning stage.

### 16 **20.9.2 Supplemental Local Area Network Room**

17 In addition to the LAN room, the SLAN room contains head-end equipment needed for the access control,  
18 intrusion detection system (IDS), closed-circuit television (CCTV) system, and non-intrusive inspection (NII)  
19 system. The SLAN room shall have a minimum area of 120 sq. ft and requirements for HVAC, power, location,  
20 and adjacencies similar to the LAN room. This room will be constructed in compliance with the current CBP  
21 SPPH.

### 22 **20.9.3 Site Backbone Distribution**

23 Backbone connectivity shall be provided between the main point of entry (MPOE) of the facility and the LAN  
24 room. There shall be a minimum of two four-inch conduits from the MPOE to the LAN (one empty for future  
25 needs). A fiber backbone shall run from the LAN room to all IDFs within the CSA. Secure conduit shall be  
26 supplied for cabling that exits and then re-enters the CSA.

### 27 **20.9.4 Intermediate Distribution Frame Room**

28 An IDF room shall be provided whenever telecommunications circuit runs exceed 300 ft. The IDFs shall have a  
29 minimum area of 110 sq. ft and requirements for HVAC, location, and adjacencies similar to the LAN room.  
30 Each IDF shall have convenience outlets and dedicated power for installed equipment, as required. The need  
31 for power panels and plywood backboards shall be evaluated on a case-by-case basis. All equipment racks shall  
32 have lockable front and rear doors. For additional planning information related to these spaces, contractors  
33 should refer to Chapter 22, Room Data Sheets.

### 34 **20.9.5 Horizontal Distribution**

35 Overhead cable trays are the preferred distribution system within structures to allow for future expansion.

36

### 37 **20.9.6 Conduits and Cables**



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1 Conduits to inspection stations shall be a minimum of four inches in diameter for trunks and two inches for  
2 branches. Excess capacity shall be provided for future expansion.

3 Cabling shall provide redundant capacity. Cabling in public areas, violator areas, between buildings, and  
4 inspection areas shall be housed in conduit dedicated for CBP use only. Data lines, the LAN, and fiber optics  
5 cabling shall be Category 6-A shielded cable or other technologies as directed by OIT. Fiber cabling that exits  
6 and then re-enters the CSA shall be one continuous piece and shall be housed in a secure conduit. Inner ducts  
7 shall be provided inside communication ducts that hold fiber optic cables. Corrosion-resistant conduit is  
8 required for any exterior conduit. For conduit placed below grade, the conduit must be reinforced to avoid  
9 collapsing under the surface weights from vehicles. All conduits shall have at least two pull strings with labels  
10 for their corresponding use. Separate conduits are required for each use, including voice, data, power, alarm,  
11 security systems, and mechanical controls.

12 Building codes, industry standards, the individual length of run, voltage drop, and signal type should be  
13 considered when selecting cabling type. Other considerations shall include the existing infrastructure, system  
14 maintenance, system stability, and future system requirements.

15 Fiber optic cabling should be installed in accordance with industry standards, including the Fiber Optic  
16 Association (FOA) guidelines. Installed fiber should be tested using a time-domain reflectometer (OTDR) to  
17 ensure proper installation and performance quality. Fiber optic should be 62.5/125 $\mu$ m multimode cable or a  
18 hybrid cable containing both multimode and single mode, depending on transmission distance and number of  
19 devices. The number of strands to each node depends on the number of cameras and devices. Each node should  
20 have a minimum of 30% dark strands of fiber for future use. All fiber connectors shall be approved by OIT.

### 21 20.9.7 Security Systems Rack and Cabling

- 22 ● A lockable rack with front and rear doors should be provided for the security system and shall be placed  
23 in a secure location (typically the SLAN or IDF room).
- 24 ● All provided cabling shall be brought directly from the device to the secured rack location or secure fiber  
25 node.
- 26 ● One data network drop and one power cable shall be provided for each camera.
- 27 ● One data network drop, one power cable, and one shielded audio cable shall be provided for each camera  
28 and microphone combination.
- 29 ● One shielded audio cable (see audio requirements) shall be provided for the microphone.
- 30 ● Devices carrying video and data shall be manufactured by International Fiber Systems (IFS), or  
31 equivalent standards, and have a comprehensive warranty.
- 32 ● All fiber optic cabling shall be installed and certified in accordance with industry standards.

### 33 20.9.8 Outlet Provisions

34 Communication cables and outlet locations shall be provided for large open office and work areas. Each  
35 workstation shall have the capacity for a minimum of four pair UTP Category 6-A cable jacks. Podium/booths  
36 shall have the capability for two data lines: one for Office of Biometric Identity Management (OBIM) and one  
37 for CBP systems, plus spares for expansion options. A multiple use telephone line shall be provided. All  
38 communications and data outlets shall have protected identification/address labeling capability.



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### 1 20.9.9 Accessible Ceilings and Floors

2 Requirements for distribution pathway systems and areas requiring accessible ceilings and floors shall be  
3 identified early in a project to ensure proper coordination. In general, ceiling distribution systems are preferred.  
4 Floor distribution systems may be considered, but shall not be used in secure areas.

### 5 20.9.10 Antenna or Radio Installations

6 The A/E should anticipate that roof-, tower-, or pole-mounted antennae will be required by CBP. Antenna  
7 mounting and location requirements shall be determined by the A/E as early in the design process as possible,  
8 preferably during the concept phase. Antenna requirements shall be coordinated with the OIT. If more than one  
9 antenna will be required, they should be grouped in one general location providing this configuration does not  
10 result in RF interference. Appropriately sized conduit shall be provided from each antenna location to the room  
11 in which the radio communications equipment is housed. The antennae shall be treated as an integral part of  
12 the visual design and not expeditiously tacked onto a building without consideration to the design intent.  
13 Antennae shall be shown on the design development building elevation drawings.

14

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# PHYSICAL SECURITY REQUIREMENTS

Cargo Facilities Design Standard  
2019 (Draft)



**U.S. Customs and  
Border Protection**



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.



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### 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



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1 resistant partition/wall is placed behind the officer interacting with the public, then any structure  
2 (counter, podium, half wall, etc.) between the officer and the public shall also be bullet resistant.

- 3 ● Shelters: The cargo facilities are not designed as Federal Emergency Management Agency (FEMA) fall-  
4 out shelters nor are they designed to be a part of the U.S. National Defense System. The cargo facilities  
5 shall be designed to allow law enforcement to maintain control of the public and suspected criminals  
6 encountered during the inspection process.

### 21.4 ELECTRONIC SECURITY SYSTEM(S)

8 CBP electronic security systems (ESS) consist of an access control system (ACS), an alarm system comprising  
9 of intrusion and duress sensors, and a closed-circuit television (CCTV) system.

10 Any ESS that will use CBP network infrastructure must be approved by the Office of Information and  
11 Technology (OIT). All equipment and software must be listed in the OIT Technology Reference Manual (TRM)  
12 and be a part of a security authorized Federal Information Security Management Act (FISMA) system before  
13 the equipment is connected or used on the network. CBP Cyber Security Directorate will advise of system's  
14 status or requirements during project planning.

15 Access to any ESS components by non-CBP personnel must be submitted in advance with a documented request  
16 to the port director (PD). CBP may allow the view and control of some of its cameras during non-operational  
17 hours.

#### 21.4.1 Access Control System

19 The primary function of the ACS is to monitor and control access to secure doors within the facility. Current  
20 electronic monitoring and control systems are based on the supervised use of identifying badges with card and  
21 numeric keypad or biological identification technology. Remotely controlled electronic or magnetic locking  
22 devices, door status sensors, or other electronic devices allowing authorized access.

23 CBP areas requiring ACS may include, but are not be limited to:

- 24 ● Processing areas.
- 25 ● Arrival vestibules.
- 26 ● Exit and perimeter doors.
- 27 ● Sterile corridors.
- 28 ● CBP operational support office and support spaces.

29 The ACS connects and manages door card readers and other related input/output devices. The ACS is used to  
30 monitor duress and tamper alarms, and state of key switches, by monitoring the change of state.

31 ACS must be able to:

- 32 ● Provide access to designated areas by authorized CBP personnel.
- 33 ● Deny access through controlled doors by unauthorized individuals.
- 34 ● Monitor and record in real time the opening and closing of all perimeter doors located within the cargo  
35 facility.
- 36 ● Configure and maintain monitored (alarmed) point tables, authorized user tables, and other databases.



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- 1 ● Detect, alarm and tamper, or trouble conditions at all monitored points.
- 2 ● Collect and process information from monitored points.
- 3 ● Partition users in the ACS based on their access levels.
- 4 ● Annunciate all alarm, tamper or trouble conditions, advisories, and control input errors.
- 5 ● Maintain a time-stamped log of alarm, tamper or trouble conditions, advisories, and executed keyboard
- 6 control functions.
- 7 ● If systems integration is approved by OIT, CCTV cameras shall provide live view of cameras associated
- 8 with designated alarm conditions.
- 9 ● Display and print system status information on demand.
- 10 ● Store all alarm, tamper or trouble conditions, advisories, executed keyboard control functions, and test
- 11 results, and access this information.
- 12 ● Maintain historical records, system programs, and database information.
- 13 ● Display and print historical logs on demand.
- 14 ● Communicate with selected remote locations.
- 15 ● Perform system setup and provide background processing.

16 The ACS must also include identity management functionality to ensure issuance of visitors' ID cards and  
17 management of access rights. This functionality may be offered through a stand-alone identity management  
18 solution, which must be integrated with the ACS.

19 An interface with building fire alarm systems is also required to ensure that designated doors are unlocked  
20 when a fire alarm is activated.

21 Entry to the CBP perimeter shall be controlled by card reader/keypad requiring the presentation of valid  
22 identifying information authorized by CBP. Once the ACS has validated the identifying information, the door  
23 unlocks and the alarm is shunted for a predetermined, programmable period of time, allowing access to  
24 authorized persons. The PSS shall control selected doors providing access to CBP operational support areas.  
25 Doors, from the non-secure side of the facility or the processing floor, shall have card reader/keypad ingress and  
26 unrestricted egress.

### 27 A. Cargo Facility Perimeter

28 A cargo facility perimeter consists of all areas and land under CBP control which is free of unauthorized  
29 individuals, illegal contraband, or any undeclared items requiring declaration to CBP under published  
30 United States laws and regulations.

31 Secure perimeter doors capable of providing unauthorized entry to the secure area shall be controlled by  
32 card reader/keypad. Perimeter door hinges should not be exposed to unsecure areas or have removable hinge  
33 pins and latch guards. Cargo facilities using biometrics to authorize entry to secure doors will also be  
34 considered by CBP. The CBP shall manage access rights for individuals and control access to sterile areas.  
35 The ACS can immediately revoke an individual's access to the sterile area.

### 36 B. CBP Office Area

37 The perimeter of a CBP office area is defined as the walls that separate the public and operational support  
38 spaces from other areas of the processing facility and/or the non-secure side of the facility.



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1 Doors providing access to the CBP office area from the processing facility or the non-secure side of the facility  
2 shall have a two-factor approved product list (APL) card reader for ingress and unrestricted egress as  
3 defined in this chapter. In addition to the APL card reader, doors entering the office area from a non-secure  
4 side of the facility shall have tamper-proof hardware and be equipped with a high security lockset and  
5 cylinder that meets or exceeds Underwriters Laboratories (UL) 437. Interior office doors, except for the local  
6 area network (LAN)/SLAN/IDF rooms and other secure room(s), will have standard locksets keyed  
7 individually and keyed to a CBP master key. CBP locks will not be keyed to the host facility's master key.  
8 CBP shall furnish emergency access keys to authorities as required.

### 9 C. Emergency Exits

10 CBP perimeter exits providing emergency egress to non-CBP personnel in the cargo facility that are  
11 breached shall generate a local audible/visual alarm at the door and other designated locations, as required.  
12 Engaging a door bar for more than two seconds shall set off an alarm and, if systems integration is approved  
13 by OIT, activate the associated CCTV camera. Emergency exits should be equipped with special locking  
14 devices, approved by the National Fire Prevention Association (NFPA), that provide opening delays of 15-  
15 30 seconds.

16 At small facilities, some emergency exits located in the immediate vicinity of the CBP officer work area may  
17 only require a local audible/visual alarm. The CBP grants this exception on a case-by-case basis.

### 18 D. Door Status Monitoring

19 The ESS controls access and monitors the cargo facility perimeter. The open or closed status of all perimeter  
20 doors shall be monitored and recorded in real time. Unauthorized opening and doors left opened for extended  
21 periods of time, shall initiate an alarm and, if systems integration is approved by OIT, activate the  
22 associated CCTV camera. This allows an operator to assess the breach and direct an appropriate response.  
23 Authorized access requires that the door identification, time of access, and identity of user be logged to a  
24 history file. The CBP shall provide a local audible/visual alarm at any perimeter door designated as an  
25 emergency exit.

### 26 Non-Operational Doors

27 Non-operational doors, primarily emergency exits, do not require card reader/keypad control except for  
28 selected doors providing authorized access to operational areas. When an emergency exit door hardware is  
29 activated, a local audible/visual alarm and an alarm event shall be generated. If permitted by local codes,  
30 CBP prefers that emergency exits incorporate delayed egress where possible. The unlock delay must be  
31 coordinated with CBP. Local alarms can only be silenced by a valid card swipe and disabled by officers or  
32 the Megacenter if the cargo facility is closed for operations.

### 33 Operational Doors

34 Controlled operational doors require card reader/keypad access to authorized persons without initiating an  
35 alarm unless the door is forced open or remains open beyond the programmed access time. To the extent  
36 allowed by local codes, security locking mechanisms must have fail-secure configurations.

37



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### 1 21.4.2 Alarm Monitoring System

2 Alarms generated within the CBP secure perimeter and duress alarms are annunciated at CBP-designated  
3 locations officers shall be able to:

- 4 ● Acknowledge and process CBP door alarms to determine an appropriate response and to acknowledge  
5 and disable the alarm when the area has been secured.
- 6 ● View and record the output from any CCTV camera associated with an alarm, if systems integration is  
7 approved by OIT.
- 8 ● Place an alarm point in bypass mode to silence repeated alarms resulting from testing or equipment  
9 failure.

### 10 21.4.3 Intrusion Detection System

11 An intrusion detection system (IDS) is required to identify unauthorized access to specific areas within the CBP  
12 facility. Motion sensors must employ dual technology detectors (with passive infrared [PIR] being one of the  
13 devices), microwave sensors are not permitted. The system, at a minimum, shall have PIR volumetric sensors,  
14 high security door position switches, and glass break sensors (where applicable). An uninterruptable power  
15 supply (UPS), emergency backup, and an alternative method of communication with the monitoring station  
16 (wireless phone link or additional analog/digital telephone line) are required. The IDS and components shall be  
17 UL 639 compliant, unless designated by OPR SMD. A keypad disable control shall be located inside the room  
18 by the entry door. The system shall be monitored on a 24-hour basis by CBP or by the Megacenter, if this facility  
19 is not staffed full-time.

### 20 21.4.4 Intercommunication Subsystem

21 The intercommunication subsystem (ICS) provides two-way communications between CBP supervisors and  
22 personnel in primary inspection booths and secondary inspection areas and allows operators to communicate  
23 with officers or clearly assess a problem and provide appropriate assistance. Remote units at access control  
24 points should have pushbuttons to operate in a hands-free mode.

25 Intercom units shall be tamperproof and of industrial quality. The address of CBP master stations, to which  
26 remote units are automatically connected, should be locally programmable to allow for future changes. CBP  
27 master stations shall be able to originate a call to any remote station, receive and queue up calls from remote  
28 stations, and forward calls to the Megacenter when the facility is closed.

### 29 21.4.5 Call and Duress Alarm Annunciation

#### 30 A. Call Monitoring

31 Each primary processing podium/booth, the secondary processing areas, and the secondary workstations  
32 are equipped with a communications system for officers to request assistance from designated location(s).  
33 The communication system may be a telephone or a multi-zone intercom system.

#### 34 B. Duress Alarms

35 Duress alarms generate a separate and distinct audible/visual alarm in CBP designated location(s). CBP  
36 shall have the ability to monitor and manage these alarms.



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1 Duress alarm (audible/visual): Used to generate an alarm locally. This alarm has one function which is to  
2 alert the immediate area and the monitoring center that assistance is needed.

3 Duress alarm (silent): Used to generate an alert sent to the monitoring station without sounding a loud  
4 siren at the source of the alarm and notify of a potential emergency, or request assistance.

### 5 **21.4.6 Closed Circuit Television System**

6 The CCTV system is designed to perform two functions: assessment and surveillance of the cargo facility.  
7 Assessment cameras are used by CBP to conduct immediate visual assessments of threats posed by alarm  
8 events. Surveillance cameras are used by CBP to monitor activity both inside and outside the facility. CBP  
9 employs surveillance cameras at cargo facilities to monitor arriving commercial goods. All cargo facility access  
10 points must be equipped with CCTV cameras to ensure complete and continuous CCTV surveillance coverage.

11 At certain facilities, CBP officials may require additional cameras not listed in this section. CBP must be  
12 consulted during the CCTV system planning. All camera views shall be continuously recorded to include alarm  
13 recording. It is necessary to position both assessment and surveillance cameras to view the faces and/or activity  
14 of approaching visitors.

15 Several CBP operational support rooms generally within the CBP operational support space require fixed  
16 camera coverage (preferably with wide angle lens capability). The following are some of the rooms within CBP  
17 operational support space: public reception/lobby, weapons storage, secure storage, temporary seized property,  
18 the LAN, and other strong rooms designated by the SMD. All camera views, except for views generated by  
19 cameras in the secondary processing areas, are displayed at the security workstations using the CCTV control  
20 window, manual controls or by selecting the appropriate icon on one of the graphic displays.

21 Camera views are monitored at a designated location determined by local CBP management and OPR SMD  
22 security specialists.

#### 23 **A. Assessment Cameras**

24 Assessment cameras are located at all cargo facility access points and are the primary tool for evaluating a  
25 breach prior to dispatching response personnel. Cameras, wherever possible, are located on the egress sides  
26 of doors and in certain cases, CBP may also require cameras on the ingress sides. When a door activation  
27 bar is depressed for more than two seconds, the associated camera must activate if systems integration is  
28 approved by OIT. All alarm assessment camera outputs are automatically recorded.

#### 29 **B. Surveillance Cameras**

30 Surveillance cameras allow officers to track the movement of cargo from the primary and secondary  
31 processing areas and initiate an appropriate response to any potential problem. The processing areas shall  
32 have 100% continuous CCTV coverage with multiple views. A mix of fixed and pan, tilt, zoom (PTZ) cameras  
33 must be used to provide complete CCTV coverage.

34 Surveillance cameras, generally PTZ, in the secondary area permit officers to view activity and address any  
35 concerns. Fixed cameras are required to monitor cargo, where secondary cameras do not adequately cover  
36 this area. One or more PTZ cameras is required in the general public lobby (governed by size of lobby). The





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1 CCTV cameras are necessary to monitor public escalators and elevators and any routes that travelers who  
2 require Architectural Barriers Act Accessibility Standard (ABAAS) standards may travel.

3 All camera views should be viewable from any security workstation if the user has the correct permissions.

4 Exterior PTZ cameras are required by CBP to provide surveillance of the routes traveled by trucks and cargo  
5 between the border and the cargo facility. To ensure unobstructed views, cameras should be mounted at 14'-  
6 6" height. Rooftop cameras shall monitor all ground routes traveled by trucks and cargo approaching,  
7 moving within, and exiting the cargo facility.

### 8 C. Integrity Cameras and Microphones

9 Dedicated integrity cameras with audio/visual recording capabilities are required to monitor and record  
10 officer-traveler interaction in addition to general surveillance cameras. These cameras shall be installed  
11 and used at locations where officer-traveler interaction take place. While cameras with built-in microphones  
12 are acceptable, ceiling-mounted cameras with built-in microphones are impractical due to the inability of  
13 the system to clearly capture interactions. The integrity camera shall include a clear view of the interaction  
14 between the officer and the traveler. The CBP preferred viewing angles are over-the-shoulder view from  
15 behind and to the side of the officer (to capture the officer's profile) or a profile view including both the  
16 traveler and officer. When using a ceiling mounted camera, an appropriate lens shall be considered, and a  
17 separate microphone placed closer to the interaction shall be provided. Similarly, installing a camera with  
18 a built-in microphone in the podium/booth is not desirable. The camera and microphone shall be installed  
19 where neither the equipment nor the recording are prone to interference or tampering.

### 20 21.4.7 Public Address System

21 The CBP shall have a public address/paging master station that allows officers to transmit messages to various  
22 zones within the cargo facility. The required zones include CBP primary and secondary processing areas and  
23 operational support spaces. Public address zones in processing areas convey important messages and/or  
24 instructions to the general public, if necessary. The system should be capable of broadcasting brief recorded  
25 messages to a single person or to the entire cargo facility.

## 26 21.5 SYSTEM DESIGN FEATURES

27 The following security features shall be incorporated into the individual facility security design. Existing  
28 conditions, site constraints, or specific operational mandates may affect the extent of these individual features.

- 29 ● Access points to the roadways and parking areas of the facility shall be clearly identified by signage,  
30 with restrictions for access clearly stated. All vehicle areas, including visitor and staff parking and  
31 service docks, shall be provided with appropriate site lighting, access control, and video surveillance  
32 capability.
- 33 ● Violator and seizure areas shall not be located where the public can observe them. Seizure vaults shall  
34 not be located on exterior walls.
- 35 ● Discrete building zones shall be used to separate inspection areas, violator areas, office areas, waiting  
36 areas, counter areas, and staff support areas. Separation shall be provided between vertical circulation,  
37 the public lobby, and the inspection areas. No places of concealment shall exist within the cargo facility  
38 accessible by the public, including under stairs, behind columns, or within other areas of the building.



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- 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.
- 5       Toilets ideally should be located at the entrance to the primary processing area. Toilets should not be
- 6       located adjacent to entrances/exits to/from access-controlled CBP spaces.
- 7       ● The following components should be not located near the inspection and public lobby areas:
- 8               ● Emergency generator, including fuel systems and day tank.
- 9               ● Fuel storage.
- 10              ● Main switchgear.
- 11              ● Critical distribution feeders for emergency power.
- 12              ● Telephone distribution and main switchgear.
- 13              ● Fire pumps, including fire sprinkler system and water supply.
- 14              ● Building control centers.
- 15              ● The UPS systems that control critical functions.
- 16              ● Main refrigeration systems that are critical to building operation.
- 17              ● Elevator machinery and controls.
- 18              ● Shafts for stairs, elevators, and utilities.
- 19       ● The building perimeter and doors between inspection areas and staff-restricted areas shall be designed
- 20       to protect against forced entry. Facilities shall separate public inspection areas from staff entrances.
- 21       ● The security system shall include high security switch Level 2 (HSS-2) or balanced magnetic reed
- 22       switches, glass break sensors, balanced magnetic contact switch sets, a CCTV monitoring station, a color
- 23       CCTV system, and a duress alarm. The access system for facilities shall be designed in compliance with
- 24       the Federal Information Processing Standard (FIPS) 201 Personal Identity Verification (PIV) for
- 25       Federal Employees and Contractors. Homeland Security Presidential Directive (HSPD)-12 requires
- 26       federal facilities to have secure personal electronic identification access control. These systems may
- 27       include card readers as well as biometric readers. Cardkey access systems or similar personal
- 28       identification verification systems shall be provided on all perimeter doors and doors leading from public
- 29       areas to staff-restricted areas.
- 30       ● Positive air pressure shall be maintained in office areas, relative to other areas. Violator and seized-
- 31       storage areas shall be maintained at negative air pressure, relative to other areas.
- 32       ● Cellular backup should be provided for security, except where cellular service is unavailable.
- 33       ● The facilities require a technology infrastructure, including a data communications room and a
- 34       telecommunications room, which shall be planned for a minimum of 50% additional capacity.

### 35 21.6 PRODUCT REQUIREMENTS

36 All security system component and equipment requirements in this chapter are the minimum baseline

37 requirements of the current state of technology. These requirements shall not preclude the use of any new

38 hardware and technologies that may be available at the time the facility program is implemented. Systems

39 must be interoperable. Products and technologies must be reviewed and approved by OPR SMD and the Field

40 Operations Facilities Program Management Office Project Manager (FOF PMO PM) prior to being included in

41 the design.



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1 All products shall be industrial quality, detention grade, or vandal-resistant based on location of installation.  
2 Products shall have proven functional design and supported by documented performance data collected from  
3 similar applications in continuous operation for a minimum of five years. Wiring to individual components shall  
4 be supervised by CBP-authorized personnel during installation. Any installation that could potentially be  
5 accessed by unauthorized persons shall be tamper-protected by a CBP-approved method. Components shall  
6 meet or exceed the industry standard for similar equipment meeting the same functional performance  
7 standards. The CBP is responsible for system maintenance.

### 8 **21.6.1 Access Control System**

9 The ACS is an essential part of ESS. It controls, monitors, reports, and records all valid and invalid entry  
10 attempts by personnel using access cards at card reader terminals. It initiates alarms from designated alarm  
11 points at duress button locations and monitoring stations.

12 The ACS typically uses either multi-door or single-door field panels that manage local access control decisions  
13 and report the change of state of monitoring switches, such as door position contacts or pushbuttons to system  
14 headend. It is preferred that the ACS field panels be internet protocol (IP) addressable and capable of running  
15 on a secure LAN within the facility. The intent of the distributed system configuration is that, in the event of  
16 communication loss between the field panel and the host headend server, the field panel will continue to operate  
17 and control access of the associated doors while archiving the transactions locally. Once communications are  
18 restored, the archived data is uploaded to the system management server.

19 The application software must be an interoperable system with open architecture type. The system shall be  
20 capable of supporting various manufacturers' field panels and field devices. It shall have the ability to be  
21 integrated with other core systems, such as the CCTV, IDS, building automation, and lighting controls.

22 The ACS will comply with HSPD-12, FIPS 201-2 policies, Government Smart Card Interoperability  
23 Specification (GSC-IS V2.1) and Schedule 70 for Products and Service Components. Security equipment  
24 installed in CBP facilities and that use CBP network infrastructure must be approved by OIT and listed in the  
25 TRM before the equipment is connected to or used on the network.

26 The ACS shall be selected from the GSA APL, provides federal agencies with products and services that have  
27 been approved for Federal Identity, Credential, and Access Management Architecture (FICAM) implementation  
28 based on rigorous security vulnerability and interoperability testing performed by the FIPS 201 Evaluation  
29 Program.

30 The ACS must support at least 1,000 credentialed users initially, with scalability to at least 5,000.

31 The end device products below are listed as preferred products for access control system applications. The actual  
32 products are evaluated by CBP during the design submittals review process. Contractors should refer to Chapter  
33 22, Room Data Sheets, for applicability of each device. Security door hardware with hardware sets are identified  
34 in Chapter 14, Architecture.

#### 35 High Security Switch

36 All doors that make up and/or are a part of the cargo facility perimeter boundaries and those doors that lead to  
37 high security spaces, as indicated on room data sheets, shall be monitored by a UL 634 HSS-2.



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- 1 Door Position Switches
- 2 Recessed door position switches shall be used for doors not requiring HSS-2. Surface-mounted door position  
3 switches are not preferred, but may be considered for existing doors where retrofitting of recessed switches may  
4 not be feasible.
- 5 Electronic Door Hardware
- 6 To the extent allowed by local codes, all electronic door locking hardware must be in fail-secure configuration.  
7 Fail safe devices, such as magnetic locks, may be considered on the exceptional basis, if no other feasible options  
8 exist. This hardware should incorporate request-to-exit (REX) functionality to avoid installation of additional  
9 hardware, such as pushbuttons and PIR sensors.
- 10 Passive Infrared Request-to-Exit Sensors
- 11 The PIR sensors are used to temporarily shunt door alarms, and in some cases, open doors.
- 12 Request-to-Exit Pushbuttons
- 13 The REX buttons are used to shunt door alarms temporarily, and to unlock doors by cutting power to locking  
14 hardware for emergency egress doors. This functionality must be achieved by built-in features on locking  
15 mechanisms, such as electrified mortise locks and panic hardware.
- 16 Request-to-Exit Door Hardware
- 17 Electrified cylindrical locksets are designed for the access control of openings in facilities where code compliance,  
18 dependable operation, and resistance to physical abuse are required. Turning the inside lever for egress  
19 activates the built-in REX output providing a momentary signal to the access control REX input for alarm shunt  
20 during egress.
- 21 Audible/Visual Alarm Annunciators
- 22 Local audible/visual alarm units with integrated horns/strobes must be provided as required. For interior  
23 applications, audible/visual alarm units must not exceed 82 dB rating. For exterior use, these units must be  
24 limited to 102 dB. Audible patterns must be user-selectable to differentiate from other alarm types, such as fire  
25 alarms.
- 26 Delayed Egress Hardware
- 27 All cargo facility perimeter doors designated as emergency egress must be equipped by audible alarms, time-  
28 delayed egress hardware with adjustable delay times up to 30 seconds. These doors must interface with the  
29 building fire alarm system to be released upon fire alarm activation.
- 30 Card Readers
- 31 All card readers used in the cargo facilities must provide two-factor authentication – a combination of a valid  
32 card reader, personal identification number (PIN), or biometrics. Card readers shall be capable of supporting



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1 current FIPS 201 PIV card configurations. It is not the intent to have dual technology enabled on all CBP doors  
2 at all times, but this PIN or biometric functionality may be enabled for elevated threat levels.

### 3 Wire Transfer

4 Where doors are equipped by electronically controlled hardware, such as locks and exit devices, a wire transfer  
5 must be provided to allow a wiring path from the door frame to the device installed on the latch side of the door.  
6 Devices must be concealed when the door is in the closed position, allowing no access to wires or wires that are  
7 visible/exposed.

### 8 **21.6.2 Closed Circuit Television System**

9 The CCTV system is another subsystem of the ESS. An IP-based system consists of a combination of fixed and  
10 PTZ cameras, processing servers running management software, network switches, network-based recording  
11 devices, and monitoring stations. The system may include video encoders to connect legacy analog cameras.

12 Digital IP color video cameras are required for all applications and shall meet the technical requirements  
13 described below. They must include integrated encoders providing a Transmission Control Protocol (TCP)/IP  
14 format output via a standard RJ-45 Ethernet jack. Camera resolution must be selected based on deployment  
15 application. Analog color video cameras should only be used to replace existing analog components. Minimum  
16 analog camera resolution must be 1080p.

17 Digital IP CCTV cameras shall meet or exceed the following specifications:

- 18 ● 3-megapixel minimum resolution.
- 19 ● Varifocal, IR corrected CS mount lens for fixed cameras and motorized zoom for PTZ.
- 20 ● Day and night capable.
- 21 ● Minimum illumination of 0.2 lux in color mode and 0.05 lux in black and white mode for outdoor  
22 cameras.
- 23 ● H.265 compression algorithm.
- 24 ● Frame rate up to 30 fps minimum.
- 25 ● Minimum of 2 independent, individually configurable video streams.
- 26 ● Wide dynamic range (WDR) capable.
- 27 ● Video motion detection.
- 28 ● Power over Ethernet (PoE) Institute of Electrical and Electronics Engineers (IEEE) 802.3af.
- 29 ● 360° pan and 180° zoom for PTZ cameras.
- 30 ● Operating temperature range of at least -20° C to 50° C (-4° F to 122° F) or more to meet local conditions.
- 31 ● Various mounting accessories: Wall, ceiling, surface, pendant, corner, roof/parapet, etc.

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### 1 21.6.3 Network Video Recorder

- 2 ● CBP must be consulted before selecting equipment/systems.
- 3 ● Network video recorder (NVR) shall be located in the SLAN room in a lockable rack with front and rear
- 4 doors.
- 5 ● Audio and video capture shall be stored on NVR for a minimum of 30 days.
- 6
- 7 ● Power, 120 or 240VAC as applicable, shall be provided.
- 8 ● Contractor shall incorporate video motion detection and tampering alarms.

### 9 21.6.4 Identity Management System

10 An identity management/badging system is required to manage access rights for card holders within the facility  
11 and create new ID cards for visitors and/or maintenance personnel. The system shall support FIPS 201, entitled  
12 PIV. Badging software provided for badging workstation shall support FIPS 201 PIV card configuration.  
13 Badging application shall be handling foreign FIPS-201 cards for the purposes of verification and adding access  
14 rights as needed.

15 Visitor management functionality of the badging system must include:

- 16 ● Ability to issue plastic card photo ID with image storage within the visitor management system.
- 17 ● Ability to issue temporary pass with time-expiring ink without photo.
- 18 ● Electronic log with data captured from valid issued ID to populate specified fields within software (ID
- 19 verified by guard or law enforcement personnel).
- 20 ● Ability to use PIV/PIV credentials from any issuer, according to host country's facility security policy.
- 21 ● Ability to issue Commercial Identity Verification credentials to visitors for electronic access per host
- 22 country's site policies and requirements.

23 The badging printer must be capable of encoding and printing text and pictures directly on standard  
24 International Standard for Organization (ISO) smart cards. The layout of smart cards may include elements  
25 specific to the facility, for example the cargo facility logo and emergency contact information.

26 The badging workspace must include an enrollment camera to capture a photo of enrolling individuals,  
27 backdrop, signature pad, biometric scanner, and verification card reader to test newly printed badges.

## 28 21.7 COMMAND AND CONTROL CONSOLE

29 Security workstations shall have text and interoperable graphic displays, high resolution color monitors for  
30 assessment and surveillance cameras CCTV control keyboard, printer for reports and logs, and a master  
31 intercom station.

32 The number of required devices depends on the size of the facility, the amount of cargo processed, and level of  
33 redundancy necessary to ensure continuous operation. Redundant security workstations allow multiple  
34 operators to handle the workload generated during peak traffic periods and continuous operation in the event  
35 of equipment failure.

36



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### 1 21.7.1 Security Workstations

2 Security workstations permit CBP officers to monitor the processing areas, acknowledge alarms, and provide  
3 appropriate response. Security workstations shall be configured based on CBP requirements.

4 Each workstation shall have controls and display multiple text and graphic windows containing the following  
5 information:

- 6 ● The CCTV controls that can view, record, playback, and archive video from any CCTV camera.
- 7 ● Audio recording from select cameras.
- 8 ● The PTZ camera controls.
- 9 ● Camera motion detection alarm capability.
- 10 ● Alarm controls permitting an operator to acknowledge, process, and release alarm events, place alarm  
11 points in bypass mode, or transfer responsibility to another workstation. Alarms requiring continuous  
12 monitoring shall be transferable to a CBP-approved monitoring location when the facility is closed.
- 13 ● Remote unlocking doors.
- 14 ● Alarm disabling feature.
- 15 ● Recorded video exporting.
- 16 ● Adjustable door shunt time to extend the time the select doors can be held open without generating  
17 alarms.
- 18 ● Facility threat level adjustments and secondary authentication technology on select card readers  
19 (PIN/biometrics).
- 20 ● Query controls allowing an operator to generate and print reports from the access control/alarm  
21 database or history logs.
- 22 ● Color-coded graphic representations of processing areas indicating triggered alarm points.
- 23 ● Color-coded text descriptions of active alarm events, listed in priority order, and any associated  
24 instructions and operator comments.
- 25 ● Color-coded maps of relevant areas that are being monitored, suitably scaled, with selectable icons  
26 indicating the location of alarm points and CCTV cameras.
- 27 ● If systems integration is not approved by OIT, separate security workstations for ACS and CCTV shall  
28 be provided.

### 29 21.7.2 Video Equipment

30 Security workstations shall have a minimum of four (4), 40" (minimum), high resolution video monitors. At least  
31 one shall have grid view capability that allows simultaneous viewing of assessment and surveillance cameras.  
32 The exact number of monitors depends on the size of the cargo facility and required level of redundancy. The  
33 position and method of mounting security workstation monitors shall not create an obstruction for viewing the  
34 cargo processing areas.

35 Security workstations shall include a manual control for every two monitors allowing an alternative method of  
36 switching camera views to a designated monitor, setting up or initiating sequencing operations, and controlling  
37 the PTZ and focus.

38



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### 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.

35





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### 1 21.8.3 Response Time

2 The system shall be capable of meeting established industry standards for ACS and the following response  
3 times:

- 4 ● Changes in the status of any monitored point (alarm, tampering, trouble condition, etc.) shall be  
5 reported within one second.
- 6 ● When multiple events occur before the first condition is annunciated, subsequent events shall be  
7 annunciated at intervals not exceeding one second each.
- 8 ● With a local database of 10,000 authorized users or less, the PSS shall be capable of processing access  
9 requests at secure doors within one second. No automated, controlled-access function shall delay the  
10 reporting of a change in the status of a monitored door more than one second.
- 11 ● The system response to a valid operator control request shall be initiated and visually acknowledged  
12 within two seconds. The system shall also advise the operator when a task is complete.
- 13 ● The system response time to a valid operator request for graphic displays should be within two seconds,  
14 but not more than five seconds.
- 15 ● When requested by an operator, historical log printouts shall begin printing within five seconds.

### 16 21.8.4 Ergonomic Design and Ease of Use

17 The PSS shall incorporate typical ergonomic features that enhance ease of use. These features include windowed  
18 formats, graphic input/output, selected buttons and icons, color-coding, blinking, shading, etc. The goal is to  
19 provide a basic and intuitive system for officers.

20 An integrated solution, where a single graphical user interface allows seamless interaction with the ACS and  
21 CCTV systems, is strongly preferred. This integrated graphical user interface must provide facility maps with  
22 all PSS cameras, access-controlled doors, and alarm points, such as duress buttons, and be intuitive for the  
23 operator. The advantage of this integrated solution is that the operator needs to learn a single interface to  
24 operate all PSS components.

25 The contractor will provide officers with adequate training in system operations immediately after it has been  
26 placed in operation and prior to the initial opening date of the new or renovated cargo facility.

### 27 21.8.5 Physical Security Construction

28 All processing area walls shall be constructed of solid materials to prevent members of the public and  
29 unauthorized employees from observing CBP operations. Physical contact between cargo and other persons not  
30 authorized to access to these areas is strictly prohibited. Lay-in acoustical tile ceilings in gate vestibules are  
31 permitted when a clear ceiling height of 9' can be maintained throughout the area. When this height cannot be  
32 achieved, contractors shall provide a solid (monolithic) ceiling.

33 Public toilets within the cargo facility perimeter shall have solid ceilings. Lay-in acoustical tile is not permitted.  
34 Janitorial closets adjacent to public toilets shall be lockable and accessible with the CBP master key.  
35 Maintenance access panels shall also be lockable or require special tools for removal.

36



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1 All cargo facility perimeter walls shall be built from finish floor to underside of deck above (slab-to-slab) allowing  
2 officers to easily identify break-in attempts. Walls within the operational support area shall be built floor to  
3 ceiling and lay-in acoustic tile ceilings are generally acceptable, except for rooms that require additional  
4 security.

5

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DRAFT

# ROOM DATA SHEETS

## Cargo Facilities Design Standard 2019 (Draft)



**U.S. Customs and  
Border Protection**



**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 suggested. 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.



**U.S. Customs and  
Border Protection**

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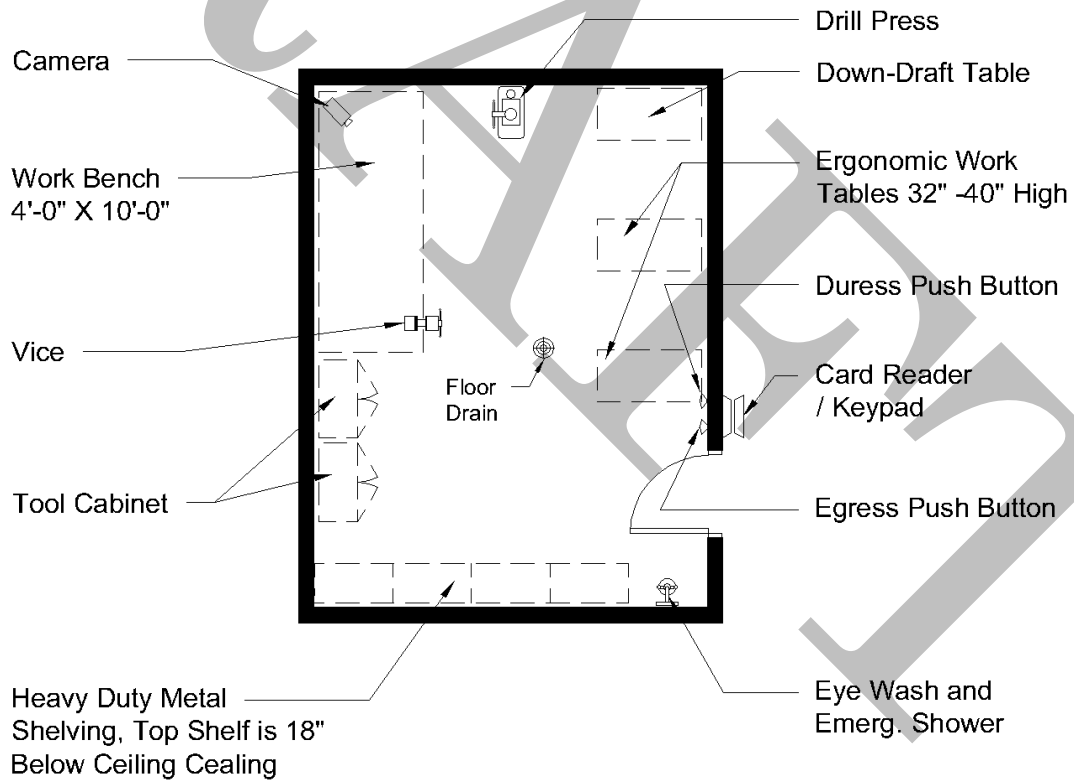
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<b>ROOM FUNCTION</b> Secondary Inspection Area		<b>Room Code:</b> CRG-01-01	<b>1.0 INSPECTION SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Secondary Inspection Area		10/23/2018 9:45 AM		
This area includes storage capability for enforcement tools and other necessary equipment and technology. Adjacent to the Examination and Physical Inspection Area.				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
1480 SF	2 Staff	<b>Sprinkler Head Type:</b> SPKLR-01 Pendant <b>Fire Special Requirements:</b>		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<b>DIV 22 - PLUMBING Chapter 17</b>		
<b>Door Type:</b>	B-B-01 Hollow Metal, Full flush, seamless	<b>Fixtures and Fittings 1:</b> EEW-1: Emergency Eye/Face Wash - Wall Mount <b>Fixtures and Fittings 2:</b> FD-1: Floor Drains - Finished Area <b>Fixtures and Fittings 3:</b> <b>Fixtures and Fittings 4:</b> <b>Fixtures and Fittings 5:</b> <b>Fixtures and Fittings 6:</b> <b>Fixtures and Fittings 7:</b> <b>Plumbing Special</b>		
<b>Door Frame:</b>	HM-1 Interior, 12 gauge hollow metal, fully welded			
<b>Door Lockset Group:</b>	C Cylindrical Lever Lockset - Storeroom Function			
<b>Door Hardware Cylinder:</b>	A-1: Cylinder, keyed individually under a CBP Master			
<b>Door Hardware Group:</b>	J Non-Removable Hinges (outswing), K Automatic Door Closer			
<b>Interior Window:</b>	N/A			
<b>Exterior Windows:</b>	N/A			
<b>Exterior Window / Door Glazing:</b>				
<b>Special Requirements:</b>				
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<b>Acoustic Separation:</b>	STC 45: Minimum sound isolation	<b>Supply Register:</b> S-2: Square Ceiling Diffuser <b>Return Register:</b> RR-2: Return Grille <b>Temp Summer:</b> 75° (max) <b>Temp Winter:</b> 72° (min) <b>Temp Control:</b> <b>Humidity Range:</b> 30% to 60% <b>Special Security:</b> N/A <b>Mech Special Requirements:</b> Negative Pressure. 100% exhaust to outdoors.		
<b>Floor Finish:</b>	FF-03 Concrete, troweled, uniform texture and appearance, sealed			
<b>Base:</b>	BF-01 Rubber Base, 4" H			
<b>Wall Construction:</b>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation			
<b>Wall Finish:</b>	WF-13: Paint, Semi-gloss			
<b>Ceiling Const. / Finish:</b>	CF-03: Acoustic Ceiling Tile, Suspended			
<b>Ceiling Remark:</b>				
<b>Ceiling Height:</b>	9' min			
<b>Alternate Construction:</b>				
<b>Const Special Requirements:</b>				
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<b>Fixed Equipment 1:</b>	Ergonomic Table, Mar-resistant, 60"L x 30"W x 32" - 42" H	<b>Receptacles:</b> R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall <b>Other Electrical Receptacles:</b> <b>Electrical Special</b> All receptacles are GFCI.		
<b>Fixed Equipment 2:</b>	Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H			
<b>Fixed Equipment 3:</b>	Drill press, one or more 4' x 10' work benches, two tool cabinets, vise, down-draft table			
		<b>DIV 26 - LIGHTING Chapter 19</b>		
		<b>Lighting Fixture:</b> L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp <b>Fixture Types Optional/Special:</b> <b>Lighting Control:</b> LC-1: Light Switch, located outside of room <b>Lighting Special</b> Illumination of 70 ft.-candles minimum at the work surfaces without shadow or glare		



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Adjustable Task Stool(s)	<i>Phone Outlets:</i>	Phone 01 Single RJ-45 phone port
<i>Furnishings and Equipment 2:</i>	Anti-Fatigue Mat(s)	<i>Data Outlets:</i>	Data 02: Dual data port
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
		<i>CCTV Camera:</i>	Fixed CCTV wide-angle lens camera, monitored at CCC.
		<i>IDS:</i>	N/A
		<i>Access Control:</i>	Two factor, APL-listed card reader, DPS
		<i>Duress System</i>	Mushroom Duress button, wall mounted
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		Secondary Inspection Area	
		CRG-01-01	



\* Location of Integrity Camera(s) and Microphone(s) to be Approved by CBP. Refer to Chapter 21.

**Secondary Inspection Area**

CRG-01-01

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<b>ROOM FUNCTION</b> <b>Agriculture Laboratory</b>		<b>Room Code:</b> <b>CRG-01-02</b>	<b>1.0 INSPECTION SUPPORT SPACES</b>
<b>ROOM SIGN</b> <b>Laboratory</b>		3/14/2019 10:19 AM	
<p>This room is the receiving point for the examination of inadmissible agricultural items. The Agriculture Laboratory is adjacent to the secondary inspection area and the examination and physical inspection area. Provision of telephone, data and power is required to support the laboratory and to transfer and receive data to assist processing. The laboratory flooring shall be of a washable non-slip material. Walls and ceilings shall be washable and floor drains provided. 100% fresh air shall be provided to the laboratory. All activities conducted are visual inspection oriented toward finding insects or diseases; soil and seeds/seed pods that may be with the agricultural product. A fume hood vent and disposal are required.</p>			<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>	
<b>150 SF (min)</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>	
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>	
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	SK-4: Double drain board stainless steel sink and stainless steel backsplash.
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<i>Fixtures and Fittings 2:</i>	FC-1 Two handle faucet, 8" centerset, Gooseneck spout, 1.5 GPM
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>	DSP-1: Disposer – Ag Laboratory Sink – 4" Dia Drain - 3 HP minimum
<i>Door Hardware Group:</i>	K Automatic Door Closer, X Power Transfer Hinge	<i>Fixtures and Fittings 4:</i>	ES-1: Emergency Drench Shower and Eye/Face Wash - Floor Mounted
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>	FD-1: Floor Drains - Finished Area
<i>Exterior Windows:</i>		<i>Fixtures and Fittings 6:</i>	
<i>Exterior Window / Door Glazing:</i>		<i>Fixtures and Fittings 7:</i>	
<i>Special Requirements:</i>	Alt door: A-A Solid core Wood. Maximize Interior Window.	<i>Plumbing Special</i>	Pre-Rinse Pull Down Sprayer/ Faucet & washboards. See in "Other Requirements"
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>	
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser
<i>Floor Finish:</i>	FF-10 Concrete, w/ seamless epoxy-resin non-slip flooring system, slope to floor drain	<i>Return Register:</i>	RR-2: Return Grille
<i>Base:</i>	BF-04 Integral with seamless flooring, 8" H	<i>Temp Summer</i>	75° (max)
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Winter</i>	72° (min)
<i>Wall Finish:</i>	WF-04: Gypsum Board, 5/8" Moisture Resistant, Painted	<i>Temp Control:</i>	Room: Dedicated Room Temperature control
<i>Ceiling Const. / Finish:</i>	CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted	<i>Humidity Range:</i>	30% to 60%
<i>Ceiling Remark:</i>	Acoustical tile not permitted.	<i>Special Security:</i>	
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>	S-1, S-4, RR-1 registers are options. See Other Requirements, Mechanical
<i>Alternate Construction:</i>	Wall: Ceramic tile	<b>DIV 26 - ELECTRICAL Chapter 19</b>	
<i>Const Special Requirements:</i>	Wall finishes must be washable. Flooring to be chemical resistant.	<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>	R-3: Receptacle, Surface Mounted in Plug Mold
<i>Fixed Equipment 1:</i>	Stainless Steel Counters/Backsplash, Stainless Steel Open Wall Shelving	<i>Electrical Special</i>	Provide plug mold 6" above counter, length of counter. All outlets are GFCI
<i>Fixed Equipment 2:</i>	Chemical Storage Cabinet, non-vented, Fume Hood with dedicated exhaust & HEPA filters	<b>DIV 26 - LIGHTING Chapter 19</b>	
<i>Fixed Equipment 3:</i>	Cabinets above and below counters, Stainless Steel Table (optional)	<i>Lighting Fixture:</i>	L-1B: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 94+ CRI Lamp
		<i>Fixture Types Optional/Special:</i>	L-13: Lighting Fixture, Surface Mounted Under Cabinet
		<i>Lighting Control:</i>	LC-5: Combination Wall Switch with Occupancy Sensor & Dimmer
		<i>Lighting Special</i>	Provide 70 FC at working surface.





**DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14**

<i>Furnishings and Equipment 1:</i>	30" (min) Refrigerator/Freezer, Adjustable Task Stool(s), Computer(s), printer, telephone
<i>Furnishings and Equipment 2:</i>	Microscopes, desktop digital scale, magnetic knife holder, and hand sanitary dispenser
<i>Furnishings and Equipment 3:</i>	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.

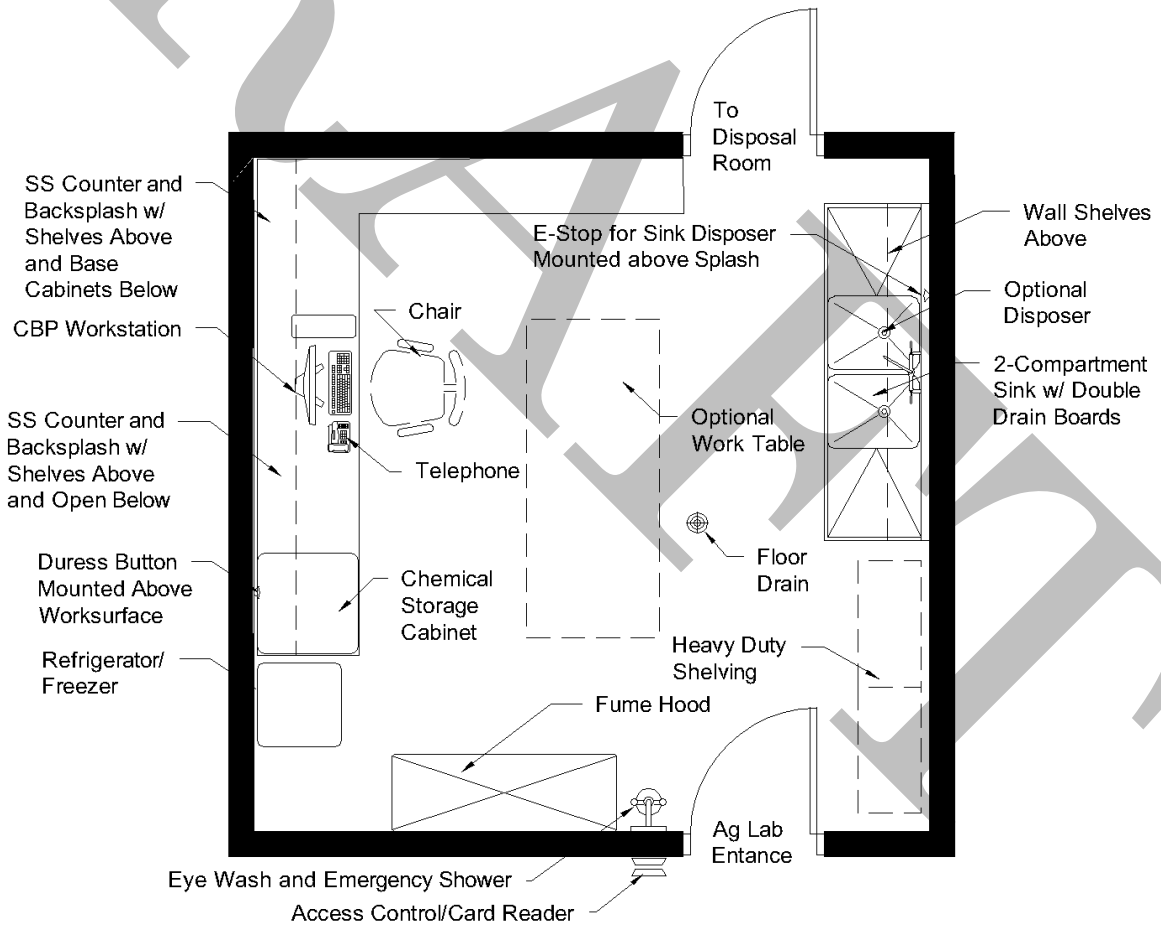
**DIV 27 - COMMUNICATIONS Chapter 20**

<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	

**DIV 28 - SECURITY Chapter 21**

<i>CCTV Camera:</i>	N/A
<i>IDS:</i>	N/A
<i>Access Control:</i>	Two factor, APL-listed card reader, DPS
<i>Duress System</i>	Mushroom Duress button, wall mounted
<i>Security Special Requirements:</i>	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

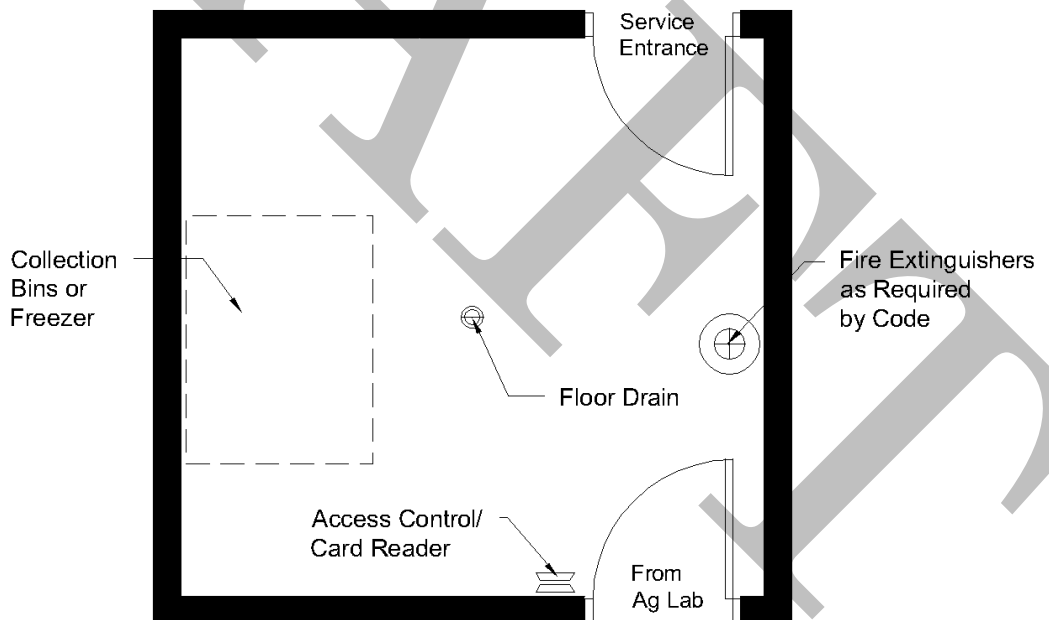
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ROOM FUNCTION <b>Agriculture Disposal Room</b>		Room Code: <b>CRG-01-03</b>	<b>1.0 INSPECTION SUPPORT SPACES</b>	
ROOM SIGN <b>Disposal Room</b>		6/26/2018 9:24 AM		
<p>Agriculture disposal room is required to house the bins used for storing confiscated 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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
<b>60 SF (min)</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>	Portable fire extinguishers must be installed in accordance with code requirements.	
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless			
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded			
<i>Door Lockset Group:</i>	C Cylindrical Lever Lockset - Storeroom Function			
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master			
<i>Door Hardware Group:</i>	K Automatic Door Closer			
<i>Interior Window:</i>				
<i>Exterior Windows:</i>				
<i>Exterior Window / Door Glazing:</i>				
<i>Special Requirements:</i>	Alt door: A-A Solid core Wood. Maximize Interior Window.			
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation			
<i>Floor Finish:</i>	FF-10 Seamless epoxy-resin flooring system, slope to Floor drain(s).			
<i>Base:</i>	BF-04 Integral with seamless flooring, 8" H			
<i>Wall Construction:</i>	Wall-04 Gypsum Board on Metal Stud, uninsulated			
<i>Wall Finish:</i>	WF-04: Gypsum Board, 5/8" Moisture Resistant, Painted			
<i>Ceiling Const. / Finish:</i>	CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted			
<i>Ceiling Remark:</i>	Acoustical tile not permitted.			
<i>Ceiling Height:</i>	9' min			
<i>Alternate Construction:</i>	Wall: Ceramic tile			
<i>Const Special Requirements:</i>	Wall finishes must be washable. Flooring to be chemical resistant.			
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Fixed Equipment 1:</i>	HAZMAT containment unit cabinet			
<i>Fixed Equipment 2:</i>				
<i>Fixed Equipment 3:</i>	Steam sterilizer/cooker, Autoclave, trash cans or Freezer. Determined by Port operations.			
<b>DIV 26 - ELECTRICAL Chapter 19</b>		<i>Supply Register:</i>	S-3: Supply Grille	
		<i>Return Register:</i>	RR-2: Return Grille	
		<i>Temp Summer</i>		
		<i>Temp Winter</i>		
		<i>Temp Control:</i>	Either: Room or Zone Temperature control	
		<i>Humidity Range:</i>		
		<i>Special Security:</i>		
		<i>Mech Special Requirements:</i>	Provide HVAC and exhaust as required by equipment manufacturer	
<b>DIV 26 - LIGHTING Chapter 19</b>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, as required by code	
		<i>Other Electrical Receptacles:</i>		
		<i>Electrical Special</i>	Dedicated receptacle per equipment manufacturer	
<i>Lighting Fixture:</i>		L-4: Lighting Fixture, Surface Mounted or Pendant 1x4 Direct/Indirect		
<i>Fixture Types Optional/Special:</i>				
<i>Lighting Control:</i>		LC-4: Combination Wall Switch with Occupancy Sensor		
<i>Lighting Special</i>		Provide 30 FC at floor level.		



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Mobile utility cart	<i>Phone Outlets:</i>	N/A
<i>Furnishings and Equipment 2:</i>		<i>Data Outlets:</i>	N/A
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
Steam Sterilizer/Autoclave: shall be capable of heating regulated garbage/QMIs to an internal temperature of 212 °F for at least 30 minutes		<i>CCTV Camera:</i>	N/A
		<i>IDS:</i>	IDS included if Room is part of building perimeter, HSS-2
		<i>Access Control:</i>	Two factor, APL-listed card reader, DPS
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	IDS is required if the Agricultural Disposal Room utilizes a garbage chute
SCHEMATIC PLAN		Agriculture Disposal Room	
		CRG-01-03	



**Agriculture Lab Disposal Room**

CRG-01-03

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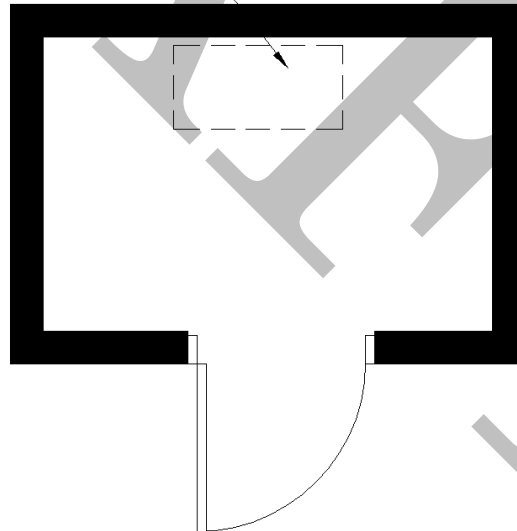
**U.S. Customs and Border Protection**

<b>ROOM FUNCTION</b> Tool Storage Room		<b>Room Code:</b> CRG-01-04	<b>1.0 INSPECTION SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Storage		5/18/2018 1:47 PM		
<p>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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
40 SF	N/A	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<i>Fire Special Requirements:</i>		
<i>Door Type:</i>		<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
<i>Door Frame:</i>		<i>Fixtures and Fittings 1:</i>	NA	
<i>Door Lockset Group:</i>		<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>		<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>		<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>		<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>		<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>		<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>	Refer to Secondary Inspection Area for room requirements.	<i>Plumbing Special</i>		
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<i>Supply Register:</i>		
<i>Floor Finish:</i>		<i>Return Register:</i>		
<i>Base:</i>		<i>Temp Summer</i>		
<i>Wall Construction:</i>		<i>Temp Winter</i>		
<i>Wall Finish:</i>		<i>Temp Control:</i>		
<i>Ceiling Const. / Finish:</i>		<i>Humidity Range:</i>		
<i>Ceiling Remark:</i>		<i>Special Security:</i>		
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>	Refer to Secondary Inspection Area for room requirements.	
<i>Alternate Construction:</i>		<b>DIV 26 - ELECTRICAL</b>		
<i>Const Special Requirements:</i>	Refer to Secondary Inspection Area for room requirements.	<b>Chapter 19</b>		
<b>DIV 10 - FIXED EQUIPMENT</b>		<i>Receptacles:</i>		
<b>Chapter 14</b>		<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 1:</i>		<i>Electrical Special</i>		
<i>Fixed Equipment 2:</i>		Refer to Secondary Inspection Area for room requirements.		
<i>Fixed Equipment 3:</i>		<b>DIV 26 - LIGHTING</b>		
		<b>Chapter 19</b>		
		<i>Lighting Fixture:</i>		
		<i>Fixture Types Optional/Special:</i>		
		<i>Lighting Control:</i>		
		<i>Lighting Special</i>		
		Refer to Secondary Inspection Area for room requirements.		



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Tool Storage Container, lockable and Tools	<i>Phone Outlets:</i>	N/A
<i>Furnishings and Equipment 2:</i>		<i>Data Outlets:</i>	N/A
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
		<i>CCTV Camera:</i>	N/A
		<i>IDS:</i>	N/A
		<i>Access Control:</i>	N/A
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		Tool Storage Room	
		CRG-01-04	

Tool Container



**Tool Storage Room**  
CRG-01-04

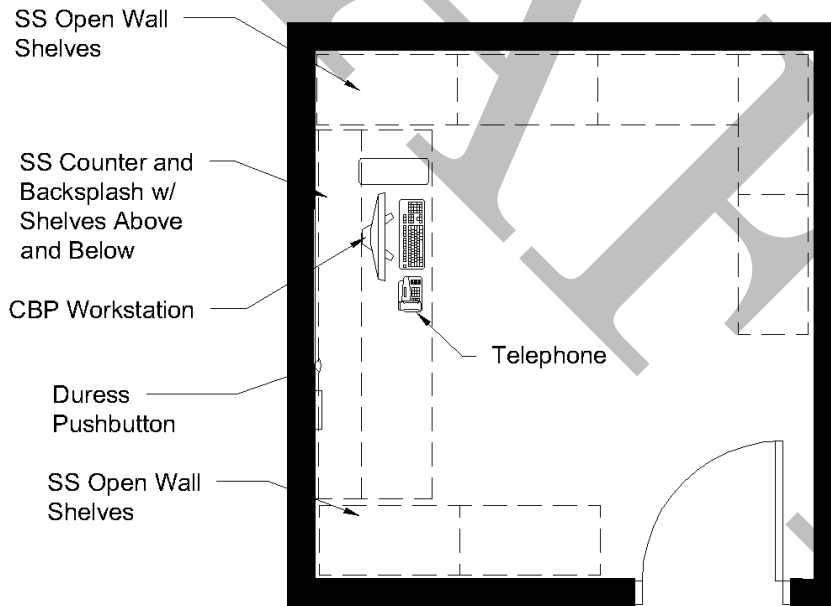
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ROOM FUNCTION		Room Code:	1.0 INSPECTION SUPPORT SPACES	
<b>Fraud/Forensic Laboratory</b>		<b>CRG-01-05</b>		
ROOM SIGN		10/23/2018 9:36 AM		
<b>Laboratory</b>				
<p>The Fraud/Forensic Laboratory is used by CBP Officers and enforcement staff to review and determine the authenticity of suspected fraudulent entrance documents. Fraud/Forensic Laboratory is located behind the documentation work area, not within hardened violator space.</p> <p>One The Fraud/Forensic Laboratory is required in the Operational Support Area.</p>				<input checked="" type="checkbox"/> Cargo
ROOM SIZE: ROOM OCCUPANCY		DIV 21 - FIRE SUPPRESSION		Chapter 16
<b>120 SF</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i>	SPKLR-08 Semi-Recessed Pendant	
DIV 08 - DOORS AND WINDOWS		DIV 22 - PLUMBING		Chapter 17
<b>Chapter 14</b>		<i>Fire Special Requirements:</i>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<i>Fixtures and Fittings 1:</i>	NA	
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 2:</i>		
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 4:</i>		
<i>Door Hardware Group:</i>	B Automatic Door Bottom, E Door Threshold, K Automatic Door Closer, X Power Transfer Hinge	<i>Fixtures and Fittings 5:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Windows:</i>		<i>Fixtures and Fittings 7:</i>		
<i>Exterior Window / Door Glazing:</i>		<i>Plumbing Special</i>		
<i>Special Requirements:</i>	Alt door: A-A Solid core Wood. J - Non-removable hinges if out-swing door.			
DIV 09 - CONSTRUCTION AND FINISHES		DIV 23 - MECHANICAL		Chapter 18
<b>Chapter 14</b>		<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Return Register:</i>	RR-2: Return Grille	
<i>Floor Finish:</i>	FF-04 VCT	<i>Temp Summer</i>	75° (max)	
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Winter</i>	72° (min)	
<i>Wall Construction:</i>	Wall-01 Gypsum Board on Wood Stud, Sound Insulation	<i>Temp Control:</i>	Room: Dedicated Room Temperature control	
<i>Wall Finish:</i>	WF-01: Gypsum Board, 5/8" Regular, Painted	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Const. / Finish:</i>	CF-03: Acoustic Ceiling Tile, Suspended	<i>Special Security:</i>		
<i>Ceiling Remark:</i>	Alt ceiling: 5/8" gypsum board.	<i>Mech Special Requirements:</i>	S-1, S-4, RR-1 registers are options.	
<i>Ceiling Height:</i>	9' min			
<i>Alternate Construction:</i>				
<i>Const Special Requirements:</i>				
DIV 10 - FIXED EQUIPMENT		DIV 26 - ELECTRICAL		Chapter 19
<b>Chapter 14</b>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<i>Fixed Equipment 1:</i>	Stainless Steel Counters/Backsplash, Stainless Steel Open Wall Shelving	<i>Other Electrical Receptacles:</i>	N/A	
<i>Fixed Equipment 2:</i>	Cabinet, GSA-approved Class V, FF-L-2740B lock on each drawer	<i>Electrical Special</i>		
<i>Fixed Equipment 3:</i>				
		DIV 26 - LIGHTING		Chapter 19
		<i>Lighting Fixture:</i>	L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp	
		<i>Fixture Types Optional/Special:</i>	N/A	
		<i>Lighting Control:</i>	LC-5: Combination Wall Switch with Occupancy Sensor & Dimmer	
		<i>Lighting Special</i>	Provide 50 FC at working surface. Black light capability.	



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Blacklight, Digital Imaging-related equipment, Microscope, Photo-phone	<i>Phone Outlets:</i>	Phone 01 Single RJ-45 phone port
<i>Furnishings and Equipment 2:</i>	Narcotics test kit, Reference library, Tack board	<i>Data Outlets:</i>	Data 01: Single data port
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
Cargo / Express: ECO to provide black light, magnifying loops, Edison Software, digital camera, Video Spectral Comparator imaging system, and microscope.		<i>CCTV Camera:</i>	N/A
		<i>IDS:</i>	N/A
		<i>Access Control:</i>	N/A
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		Fraud/Forensic Laboratory	
		CRG-01-05	



**Fraud/Forensic Laboratory**

CRG-01-05

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<b>ROOM FUNCTION</b> Seizure Processing Area		<b>Room Code:</b> CRG-01-06	<b>1.0 INSPECTION SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Seizure Processing		6/27/2018 9:37 AM		
<p>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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
180 SF	N/A	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<i>Fire Special Requirements:</i>		
<b>Chapter 14</b>		<b>DIV 22 - PLUMBING</b>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>Chapter 17</b>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	NA	
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>	D Door Stop, K Automatic Door Closer, X Power Transfer Hinge	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>	See Other Requirements below.	<i>Plumbing Special</i>		
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<b>Chapter 14</b>		<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Return Register:</i>	RR-2: Return Grille	
<i>Floor Finish:</i>	FF-03 Concrete, troweled, uniform texture and appearance, sealed	<i>Temp Summer</i>	75° (max)	
<i>Base:</i>	N/A	<i>Temp Winter</i>	72° (min)	
<i>Wall Construction:</i>	Wall-08 CMU - 8"	<i>Temp Control:</i>	Room: Dedicated Room Temperature control	
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss	<i>Humidity Range:</i>	45% (+/-5%)	
<i>Ceiling Const. / Finish:</i>	CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted	<i>Special Security:</i>		
<i>Ceiling Remark:</i>		<i>Mech Special Requirements:</i>	Exhaust 100% of the air from any space where seized narcotics are processed. Exhaust should be downwind from Inspection areas and kennel.	
<i>Ceiling Height:</i>	9' min	<b>DIV 26 - ELECTRICAL</b>		
<i>Alternate Construction:</i>	Walls: Gypsum Board on #9(10 Ga) Expanded Metal Mesh on Stud, Sound Insulation	<b>Chapter 19</b>		
<i>Const Special Requirements:</i>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>DIV 10 - FIXED EQUIPMENT</b>		<i>Other Electrical Receptacles:</i>		
<b>Chapter 14</b>		<i>Electrical Special</i>		
<i>Fixed Equipment 1:</i>	Fume Hood with dedicated exhaust & HEPA filters	Portable UPS		
<i>Fixed Equipment 2:</i>	24 - 64 SF Workstation	<b>DIV 26 - LIGHTING</b>		
<i>Fixed Equipment 3:</i>	Floor Scale	<b>Chapter 19</b>		
		<i>Lighting Fixture:</i>	L-2: Lighting Fixture, Recessed 2x2 or 2x4 Acrylic Lens, 80+ CRI Lamp	
		<i>Fixture Types Optional/Special:</i>	L-15: Lighting Fixture, Surface Mounted Task Light	
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	Provide 40 FC at working surface.	

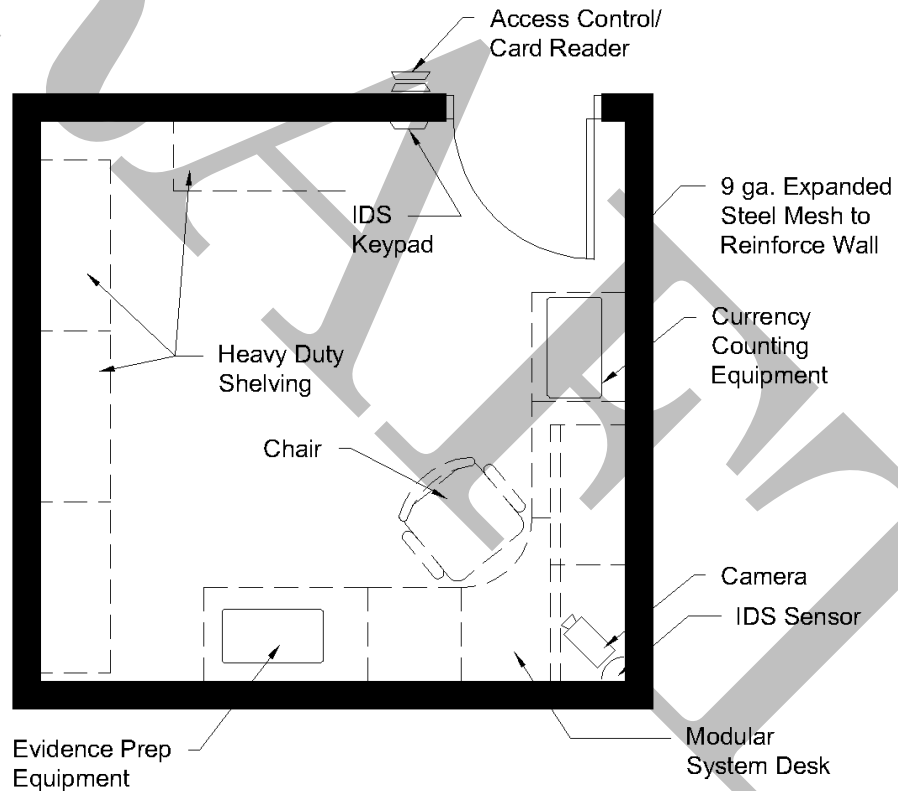




DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14	
<i>Furnishings and Equipment 1:</i>	Adjustable Task Chair(s), Evidence Prep Equipment
<i>Furnishings and Equipment 2:</i>	Currency Counting Equipment, Stainless Steel Work Table
<i>Furnishings and Equipment 3:</i>	
OTHER REQUIREMENTS	
The card reader shall 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 Chapter 20	
<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	
DIV 28 - SECURITY Chapter 21	
<i>CCTV Camera:</i>	Fixed CCTV wide-angle lens camera, monitored at CCC.
<i>IDS:</i>	IDS & Alarm, UPS, Keypad control inside, adjacent to door, HSS-2
<i>Access Control:</i>	Two factor, APL-listed card reader
<i>Duress System</i>	N/A
<i>Security Special Requirements:</i>	Camera(s) shall provide full coverage of the operations taking place within the space.

**SCHEMATIC PLAN Seizure Processing Area CRG-01-06**



Seizure Processing Area

CRG-01-06

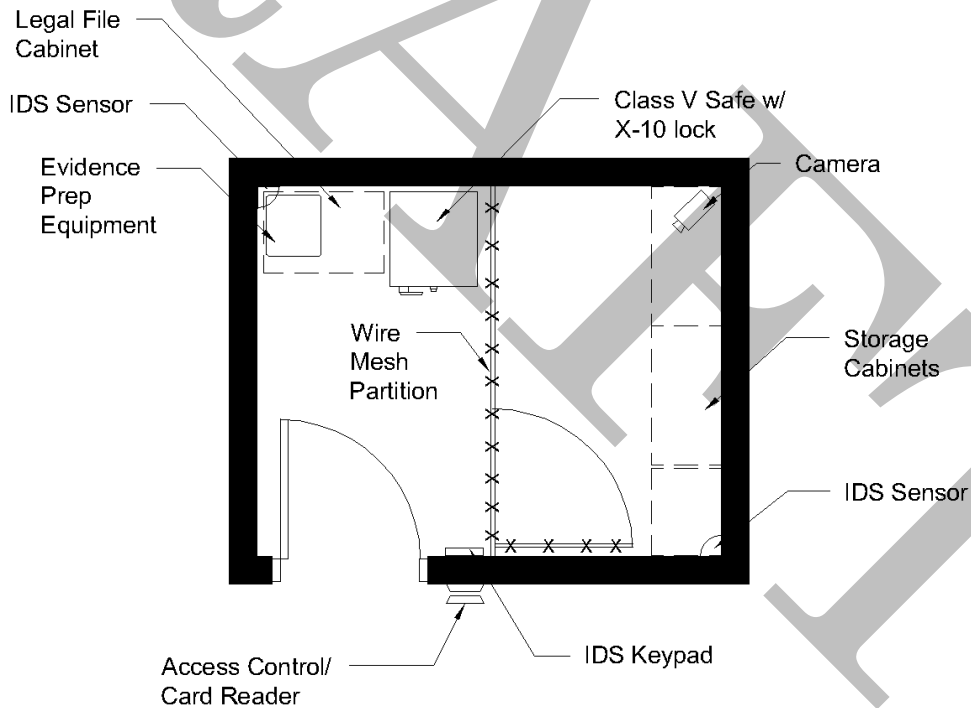
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<b>ROOM FUNCTION</b> <b>Temporary Seized Property Storage</b>		<b>Room Code:</b> <b>CRG-01-07</b>	<b>1.0 INSPECTION SUPPORT SPACES</b>	
<b>ROOM SIGN</b> <b>Storage</b>		3/14/2019 10:26 AM		
The Temporary Seized Property Storage is a hardened secure 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.				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
<b>80 SF (min)</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
<b>Chapter 14</b>		<i>Fire Special Requirements:</i>		
<i>Door Type:</i>	FE-1 SD-STD-01.01, Revision G (Amended) (Opaque) 5 min FE	<i>Fixtures and Fittings 1:</i>	NA	
<i>Door Frame:</i>	WS-1 Formed, reinforced and welded steel.	<i>Fixtures and Fittings 2:</i>		
<i>Door Lockset Group:</i>	M LKM (Lockmaster) 7000 series, FF-L- 2890B single motion egress/panic-deadbolt	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Cylinder:</i>	A-2: Cylinder, keyed individually NOT under a CBP Master	<i>Fixtures and Fittings 4:</i>		
<i>Door Hardware Group:</i>	J Non-Removable Hinges (outswing), K Automatic Door Closer, X Power Transfer Hinge	<i>Fixtures and Fittings 5:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Plumbing Special</i>		
<i>Special Requirements:</i>		<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>Chapter 14</b>		
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-12 Concrete, Sealed 8", with 5/8" reinforcing bars 6" OC each way.	<i>Return Register:</i>	RR-2: Return Grille	
<i>Base:</i>	N/A	<i>Temp Summer</i>	75° (max)	
<i>Wall Construction:</i>	Wall-09 CMU - 8" - Secure - Vertical Rebar at 16" OC (every block), fully grouted	<i>Temp Winter</i>	72° (min)	
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss	<i>Temp Control:</i>	Room: Dedicated Room Temperature control	
<i>Ceiling Const. / Finish:</i>	CF-08 8" concrete with 5/8" rebars at 6" O.C, EW	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Remark:</i>		<i>Special Security:</i>	Provide with 1/2" steel bars 6" OC each way for any openings over 96 square Inches	
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>	Negative Pressure. 100% exhaust to outdoors. Vent separately from other storage areas.	
<i>Alternate Construction:</i>	Wall-03 Gypsum Board on #9(10 Ga) Expanded Metal Mesh on Stud, Sound Insulation	<b>DIV 26 - ELECTRICAL</b>		<b>Chapter 19</b>
<i>Const Special Requirements:</i>	Walls are full height and fully connected to floor and ceiling.	<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>DIV 10 - FIXED EQUIPMENT</b>		<i>Other Electrical Receptacles:</i>	N/A	
<b>Chapter 14</b>		<i>Electrical Special</i>		
<i>Fixed Equipment 1:</i>	Cabinet, GSA-approved Class V, FF-L-2740B lock on each drawer	<b>DIV 26 - LIGHTING</b>		<b>Chapter 19</b>
<i>Fixed Equipment 2:</i>	Legal File Cabinet, GSA Class V, Multi-lock, FF-L-2740B lock on each drawer	<i>Lighting Fixture:</i>	L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens	
<i>Fixed Equipment 3:</i>	Heavy-duty metal shelving mounted to wall.	<i>Fixture Types Optional/Special:</i>		
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	Provide 30 FC at floor level.	



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
Furnishings and Equipment 1:		Phone Outlets:	N/A
Furnishings and Equipment 2:		Data Outlets:	Data 02: Dual data port
Furnishings and Equipment 3:		Communications Special	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
<p>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.</p> <p>The wall reinforcement shall be tied into the floor and ceiling reinforcement.</p> <p>All seized property spaces shall be located far from kennel spaces.</p>		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	
		CRG-01-07	



Temporary Seized Property Storage  
CRG-01-07

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**U.S. Customs and Border Protection**

ROOM FUNCTION <b>Examination and Physical Inspection Area</b>		Room Code: <b>CRG-01-08</b>	<b>1.0 INSPECTION SUPPORT SPACES</b>	
ROOM SIGN <b>Examination and Physical Inspection Area</b>		10/23/2018 10:33 AM		
<p>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.</p>			<input type="checkbox"/> Cargo	
<b>ROOM SIZE: ROOM OCCUPANCY</b>			<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>	
<b>2240 SF</b>	<b>1 Staff</b>	<i>Sprinkler Head Type:</i> SPKLR-01 Pendant  <i>Fire Special Requirements:</i> None		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>			<b>DIV 22 - PLUMBING Chapter 17</b>	
<i>Door Type:</i>	OH-1 Commercial Grade Overhead 12' - 16'W x 16'H		<i>Fixtures and Fittings 1:</i> ES-1: Emergency Drench Shower and Eye/Face Wash - Floor Mounted	
<i>Door Frame:</i>	AL-2 Interior Aluminum Storefront System		<i>Fixtures and Fittings 2:</i> FD-1: Floor Drains - Finished Area	
<i>Door Lockset Group:</i>	A Mortise Lever Lockset - Classroom Function		<i>Fixtures and Fittings 3:</i>	
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master		<i>Fixtures and Fittings 4:</i>	
<i>Door Hardware Group:</i>	B Automatic Door Bottom		<i>Fixtures and Fittings 5:</i>	
<i>Interior Window:</i>	N/A		<i>Fixtures and Fittings 6:</i>	
<i>Exterior Windows:</i>	N/A		<i>Fixtures and Fittings 7:</i>	
<i>Exterior Window / Door Glazing:</i>	N/A		<i>Plumbing Special</i> None	
<i>Special Requirements:</i>	Door and door frame to accommodate container and pallet inspection. Verify processing with OFO.			
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>			<b>DIV 23 - MECHANICAL Chapter 18</b>	
<i>Acoustic Separation:</i>	N/A		<i>Supply Register:</i> S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-03 Concrete, troweled, uniform texture and appearance, sealed		<i>Return Register:</i> RR-2: Return Grille	
<i>Base:</i>	BF-01 Rubber Base		<i>Temp Summer</i> 75° (max)	
<i>Wall Construction:</i>	Wall-08 CMU - 8"		<i>Temp Winter</i> 72° (min)	
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss		<i>Temp Control:</i> Room: Dedicated Room Temperature control	
<i>Ceiling Const. / Finish:</i>	CF-05 Exposed Structure, Suspended ceiling not permitted		<i>Humidity Range:</i> 30% to 60%	
<i>Ceiling Remark:</i>			<i>Special Security:</i>	
<i>Ceiling Height:</i>	9'-0" Min		<i>Mech Special Requirements:</i> Exhaust at 6 air changes per hour;	
<i>Alternate Construction:</i>	Match finishes of adjacent areas.			
<i>Const Special Requirements:</i>				
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>			<b>DIV 26 - ELECTRICAL Chapter 19</b>	
<i>Fixed Equipment 1:</i>	Ergonomic Table, Mar-resistant, 60"L x 30"W x 32" - 42" H		<i>Receptacles:</i> R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<i>Fixed Equipment 2:</i>	64 SF Workstation, Work counters w/ knee space, drawers, and low storage cabinets		<i>Other Electrical Receptacles:</i>	
<i>Fixed Equipment 3:</i>	NII equipment and conveyor equipment. Verify type, size and need with OFO.		<i>Electrical Special</i> Provide receptacles for workstations	
			<b>DIV 26 - LIGHTING Chapter 19</b>	
			<i>Lighting Fixture:</i> L-1A: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 85+ CRI Lamp	
			<i>Fixture Types Optional/Special:</i>	
			<i>Lighting Control:</i> LC-4: Combination Wall Switch with Occupancy Sensor	
			<i>Lighting Special</i> Illumination of 70 ft.-candles minimum at the work surfaces without shadow or glare	



**DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14**

<i>Furnishings and Equipment 1:</i>	Adjustable Task Chair(s), Recycle Bin, Waste Bin
<i>Furnishings and Equipment 2:</i>	Anti-Fatigue Mat(s), Computer(s), printer, File Cabinet, Standard 4 drawer, Video Monitor(s)
<i>Furnishings and Equipment 3:</i>	

**OTHER REQUIREMENTS**

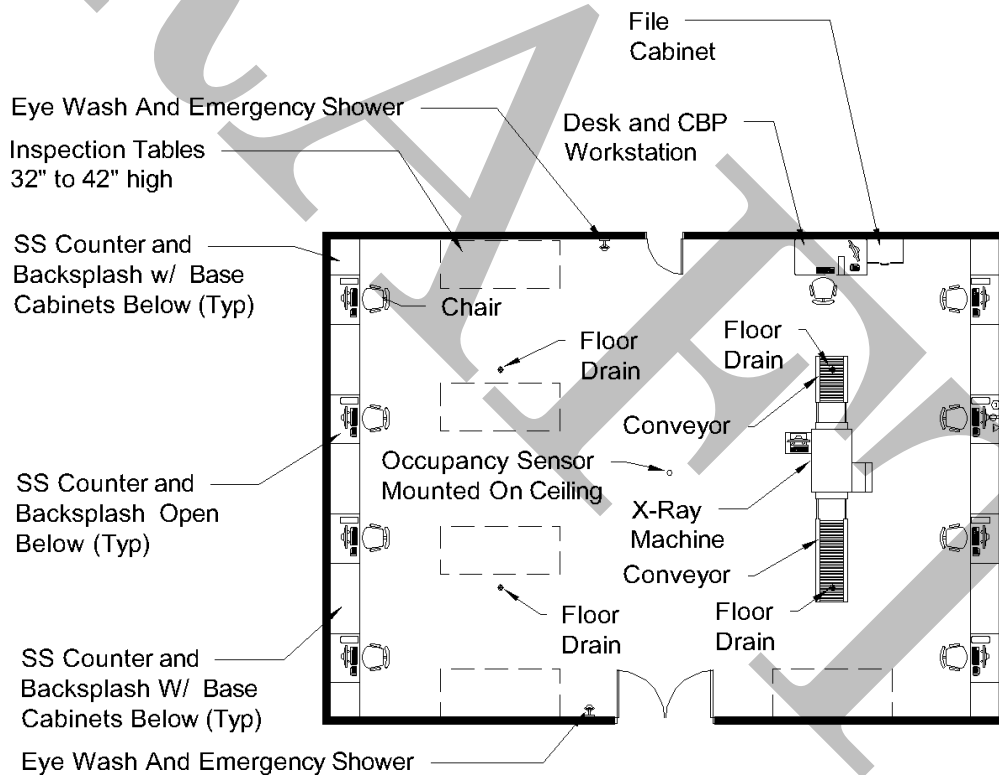

**DIV 27 - COMMUNICATIONS Chapter 20**

<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	Provide data and phone ports for workstations

**DIV 28 - SECURITY Chapter 21**

<i>CCTV Camera:</i>	N/A
<i>IDS:</i>	N/A
<i>Access Control:</i>	N/A
<i>Duress System</i>	N/A
<i>Security Special Requirements:</i>	

**SCHEMATIC PLAN Examination and Physical Inspection Area CRG-01-08**



**Examination and Physical Inspection Area**

CRG-01-08

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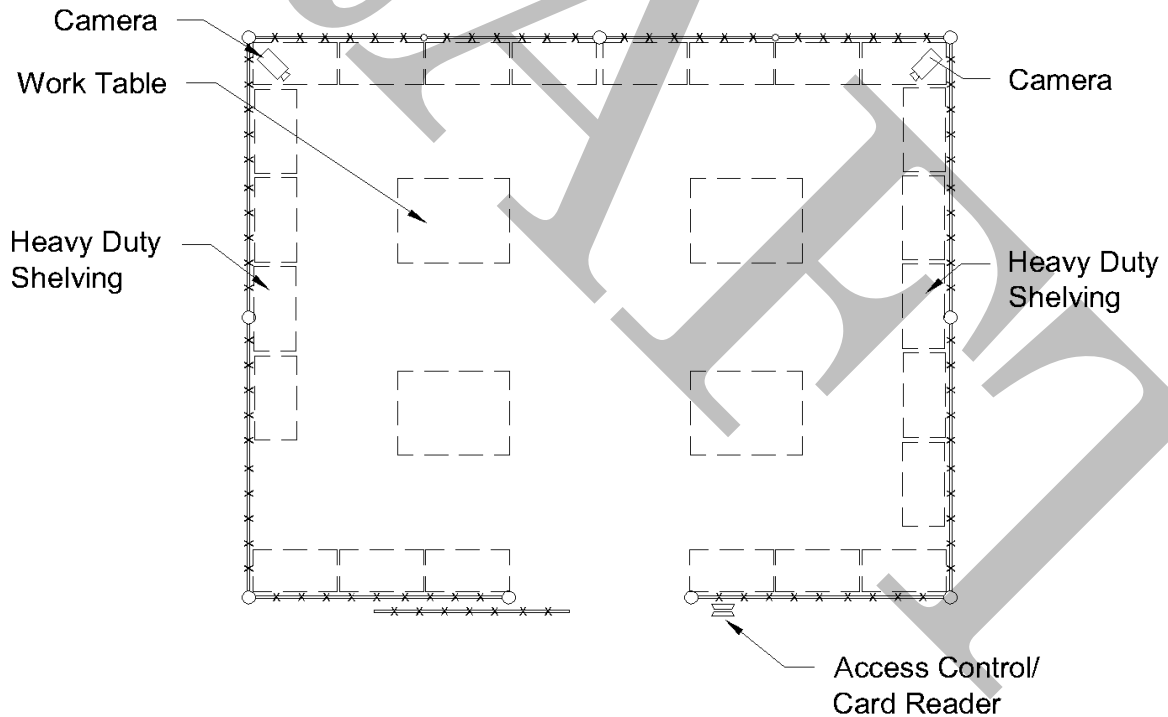
ROOM FUNCTION <b>Cargo Release Area</b>		Room Code: <b>CRG-01-09</b>	<b>1.0 INSPECTION SUPPORT SPACES</b>	
ROOM SIGN <b>Cargo Release Area</b>		5/18/2018 1:50 PM		
Cargo that has been detained for inspection, once approved for release, is transferred to the cargo release area. Close to cargo examination and physical inspection areas and CBP operational support areas.				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
<b>1000 SF</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<i>Fire Special Requirements:</i>		Portable fire extinguishers must be installed in accordance with code requirements.
<b>Chapter 14</b>		<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<i>Fixtures and Fittings 1:</i>	NA	
<i>Door Frame:</i>	HM-4 Exterior, 12 gauge hollow metal, fully welded, galvanized	<i>Fixtures and Fittings 2:</i>		
<i>Door Lockset Group:</i>	D High Security Mortise Lever Lockset w/ Deadbolt - Storeroom Function	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Cylinder:</i>	A-2: Cylinder, keyed individually NOT under a CBP Master	<i>Fixtures and Fittings 4:</i>		
<i>Door Hardware Group:</i>	J Non-Removable Hinges (outswing), K Automatic Door Closer, L Anti-Pry Strip (inswing), N/A	<i>Fixtures and Fittings 5:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Plumbing Special</i>	ES-1 Emergency Shower to be located outside of structure.	
<i>Special Requirements:</i>	Provide 12' sliding or swing gate pair, chain link to match fencing. Height and width to suit forklift.	<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<i>Supply Register:</i>		S-2: Square Ceiling Diffuser
<b>Chapter 14</b>		<i>Return Register:</i>		RR-2: Return Grille
<i>Acoustic Separation:</i>	N/A	<i>Temp Summer</i>	75° (max)	
<i>Floor Finish:</i>	FF-03 Concrete, troweled, uniform texture and appearance, sealed	<i>Temp Winter</i>	72° (min)	
<i>Base:</i>	N/A	<i>Temp Control:</i>	Room: Dedicated Room Temperature control	
<i>Wall Construction:</i>	Wall-17 HD Galv. Chain link 12' H	<i>Humidity Range:</i>	30% to 60%	
<i>Wall Finish:</i>		<i>Special Security:</i>	N/A	
<i>Ceiling Const. / Finish:</i>		<i>Mech Special Requirements:</i>		
<i>Ceiling Remark:</i>		<b>DIV 26 - ELECTRICAL</b>		<b>Chapter 19</b>
<i>Ceiling Height:</i>	As required at warehouse	<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<i>Alternate Construction:</i>		<i>Other Electrical Receptacles:</i>	N/A	
<i>Const Special Requirements:</i>		<i>Electrical Special</i>		
<b>DIV 10 - FIXED EQUIPMENT</b>		<b>DIV 26 - LIGHTING</b>		<b>Chapter 19</b>
<b>Chapter 14</b>		<i>Lighting Fixture:</i>	L-16: Light Fixture, Surface Mounted High Bay	
<i>Fixed Equipment 1:</i>	Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H	<i>Fixture Types Optional/Special:</i>		
<i>Fixed Equipment 2:</i>	Ergonomic Table, Mar-resistant, 60"L x 30"W x 32" - 42" H	<i>Lighting Control:</i>	LC-1: Light Switch	
<i>Fixed Equipment 3:</i>		<i>Lighting Special</i>	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		

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:		

**SCHEMATIC PLAN** **Cargo Release Area** **CRG-01-09**



**Cargo Release Area**

CRG-01-09

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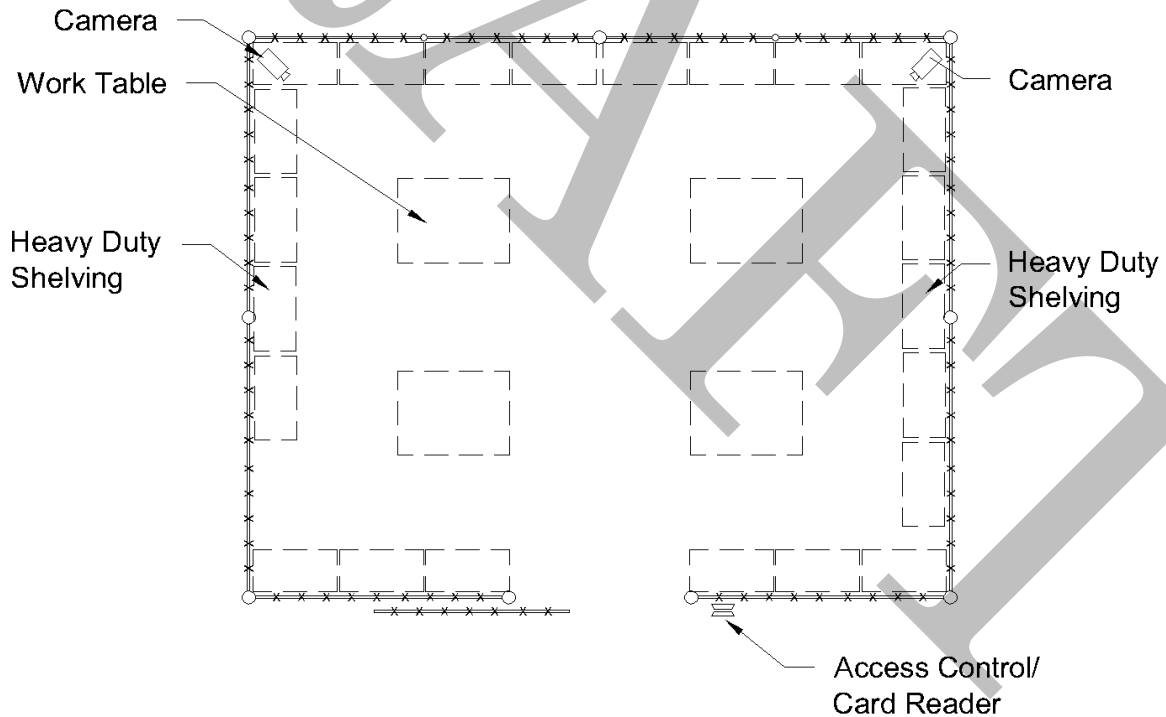


<b>ROOM FUNCTION</b> Unreleased Cargo Holding Area		<b>Room Code:</b> CRG-01-10	<b>1.0 INSPECTION SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Unreleased Cargo Holding Area		9/27/2018 11:01 AM		
<p>This area is used to store cargo that must remain under CBP control, such as shipments awaiting inspection and various clearances. Close to Cargo examination and physical inspection areas and CBP operational support areas.</p>				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
1000 SF	N/A	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>	Portable fire extinguishers must be installed in accordance with code requirements.	
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Frame:</i>	HM-4 Exterior, 12 gauge hollow metal, fully welded, galvanized	<i>Fixtures and Fittings 1:</i>	NA	
<i>Door Lockset Group:</i>	D High Security Mortise Lever Lockset w/ Deadbolt - Storeroom Function	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>	J Non-Removable Hinges (outswing), K Automatic Door Closer, L Anti-Pry Strip (inswing), N/A	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>	Provide 12' sliding or swing gate pair, chain link to match fencing. Height and width to suit forklift.	<i>Plumbing Special</i>	ES-1 Emergency Shower to be located outside of structure.	
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	N/A	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-03 Concrete, troweled, uniform texture and appearance, sealed	<i>Return Register:</i>	RR-2: Return Grille	
<i>Base:</i>	N/A	<i>Temp Summer</i>	75° (max)	
<i>Wall Construction:</i>	Wall-17 HD Galv. Chain link 12' H	<i>Temp Winter</i>	72° (min)	
<i>Wall Finish:</i>		<i>Temp Control:</i>	Room: Dedicated Room Temperature control	
<i>Ceiling Const. / Finish:</i>		<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Remark:</i>		<i>Special Security:</i>	N/A	
<i>Ceiling Height:</i>	As required at warehouse	<i>Mech Special Requirements:</i>		
<i>Alternate Construction:</i>		<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Const Special Requirements:</i>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>	N/A	
<i>Fixed Equipment 1:</i>	Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H	<i>Electrical Special</i>		
<i>Fixed Equipment 2:</i>	Ergonomic Table, Mar-resistant, 60"L x 30"W x 32" - 42" H	<b>DIV 26 - LIGHTING Chapter 19</b>		
<i>Fixed Equipment 3:</i>		<i>Lighting Fixture:</i>	L-16: Light Fixture, Surface Mounted High Bay	
		<i>Fixture Types Optional/Special:</i>		
		<i>Lighting Control:</i>	LC-1: Light Switch	
		<i>Lighting Special</i>	Provide 50 fc at floor level.	





DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
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 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		Unreleased Cargo Holding Area	
		CRG-01-10	



Unreleased Cargo Holding Area

CRG-01-10

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For Reference Purposes Only



<b>ROOM FUNCTION</b> Cargo Detention Area		<b>Room Code:</b> CRG-01-11	<b>1.0 INSPECTION SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Cargo Detention Area		5/18/2018 1:50 PM		
<p>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.</p>				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
1000 SF	N/A	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>	Portable fire extinguishers must be installed in accordance with code requirements.	
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Frame:</i>	HM-4 Exterior, 12 gauge hollow metal, fully welded, galvanized	<i>Fixtures and Fittings 1:</i>	NA	
<i>Door Lockset Group:</i>	D High Security Mortise Lever Lockset w/ Deadbolt - Storeroom Function	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>	J Non-Removable Hinges (outswing), K Automatic Door Closer, L Anti-Pry Strip (inswing), N/A	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>	Provide 12' sliding or swing gate pair, chain link to match fencing. Height and width to suit forklift.	<i>Plumbing Special</i>	ES-1 Emergency Shower to be located outside of structure.	
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	N/A	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-03 Concrete, troweled, uniform texture and appearance, sealed	<i>Return Register:</i>	RR-2: Return Grille	
<i>Base:</i>	N/A	<i>Temp Summer</i>	75° (max)	
<i>Wall Construction:</i>	Wall-08 CMU - 8"	<i>Temp Winter</i>	72° (min)	
<i>Wall Finish:</i>		<i>Temp Control:</i>	Room: Dedicated Room Temperature control	
<i>Ceiling Const. / Finish:</i>	CF-05 Exposed Structure, Suspended ceiling not permitted	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Remark:</i>		<i>Special Security:</i>	N/A	
<i>Ceiling Height:</i>	As required at warehouse	<i>Mech Special Requirements:</i>		
<i>Alternate Construction:</i>	Wall-17 HD Galv. Chain link 12' H	<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Const Special Requirements:</i>	Chain Link Walls, shall go slab-to-slab	<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>	N/A	
<i>Fixed Equipment 1:</i>	Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H, Palette racks	<i>Electrical Special</i>		
<i>Fixed Equipment 2:</i>	Ergonomic Table, Mar-resistant, 60"L x 30"W x 32" - 42" H	<b>DIV 26 - LIGHTING Chapter 19</b>		
<i>Fixed Equipment 3:</i>		<i>Lighting Fixture:</i>	L-16: Light Fixture, Surface Mounted High Bay	
		<i>Fixture Types Optional/Special:</i>		
		<i>Lighting Control:</i>	LC-1: Light Switch	
		<i>Lighting Special</i>	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

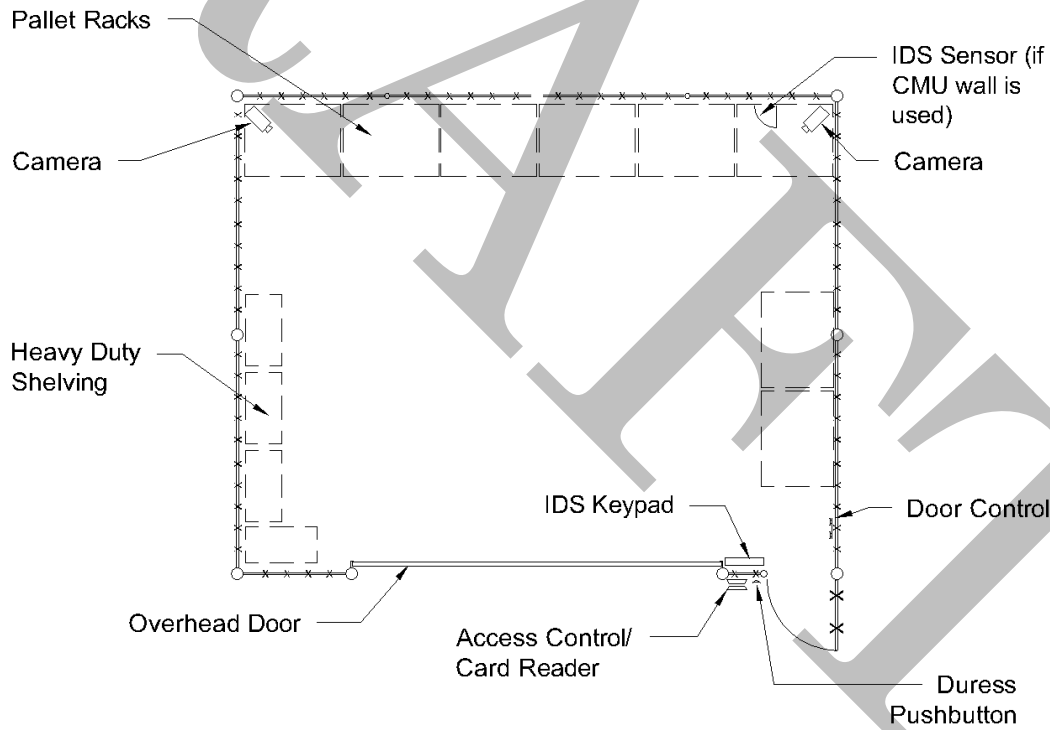
**DIV 27 - COMMUNICATIONS Chapter 20**

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:	

**SCHEMATIC PLAN Cargo Detention Area CRG-01-11**



**Cargo Detention Area**

CRG-01-11

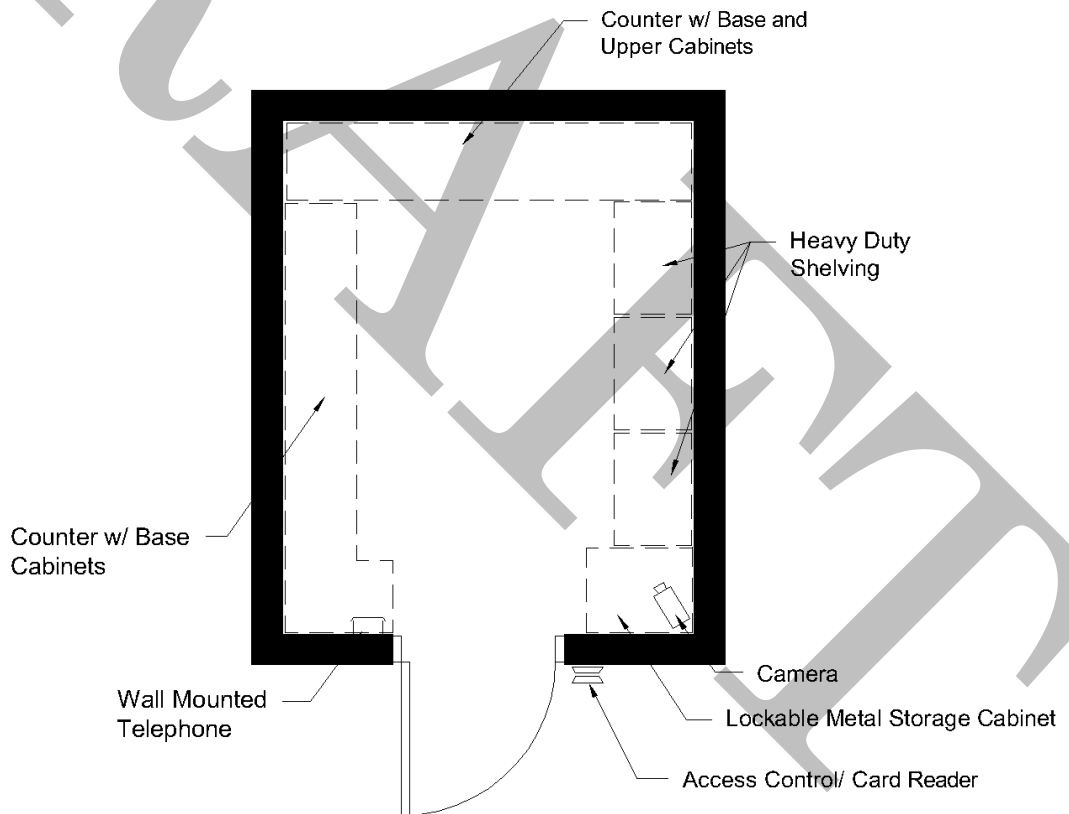
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<b>ROOM FUNCTION</b> Enforcement Tool Room		<b>Room Code:</b> CRG-01-12	<b>1.0 INSPECTION SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Storage		5/18/2018 1:49 PM		
<p>The enforcement tool room is designed to store various tools and equipment used to support inspections. The enforcement tool room is located within the secondary inspection area.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
150 SF	N/A	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<i>Fire Special Requirements:</i>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>		
<i>Door Lockset Group:</i>	B Mortise Lever Lockset w/ Thumb Turn - Entrance Function	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, E Door Threshold	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>		<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>		<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>		<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>	Alt. door: wood, full flush, solid core, 5 layers	<i>Plumbing Special</i>		
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-04 VCT	<i>Return Register:</i>	RR-2: Return Grille	
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Summer</i>	75° (max)	
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Winter</i>	72° (mmin)	
<i>Wall Finish:</i>	WF-01: Gypsum Board, 5/8" Regular, Painted	<i>Temp Control:</i>	T-1: Flush Mounted Wall Temp Sensor	
<i>Ceiling Const. / Finish:</i>	CF-01: Gypsum Board, 5/8" Regular, Painted	<i>Humidity Range:</i>	30%-60%	
<i>Ceiling Remark:</i>		<i>Special Security:</i>		
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>	S-1, S-4, RR-1 registers are options	
<i>Alternate Construction:</i>		<b>DIV 26 - ELECTRICAL</b>		<b>Chapter 19</b>
<i>Const Special Requirements:</i>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>DIV 10 - FIXED EQUIPMENT</b>		<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 1:</i>	Metal Shelving, Extra Heavy Duty, 5 shelf, 24" x 36" x 85"H	<i>Electrical Special</i>		
<i>Fixed Equipment 2:</i>	Wall Cabinets, Work Counter, Cabinets below	<b>DIV 26 - LIGHTING</b>		<b>Chapter 19</b>
<i>Fixed Equipment 3:</i>	Counters and cabinets shall be constructed of a solid material specified for high durability.	<i>Lighting Fixture:</i>	L-1A: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 85+ CRI Lamp	
		<i>Fixture Types Optional/Special:</i>		
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	Provide 50 FC at work surface	



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Tool Storage Container, lockable and Tools	<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Furnishings and Equipment 2:</i>	Telephone	<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
		<i>CCTV Camera:</i>	Fixed CCTV wide-angle lens camera, monitored at CCC.
		<i>IDS:</i>	
		<i>Access Control:</i>	Two factor, APL-listed card reader, DPS
		<i>Duress System</i>	
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		Enforcement Tool Room	
		CRG-01-12	



**Enforcement Tool Room**  
CRG-01-12

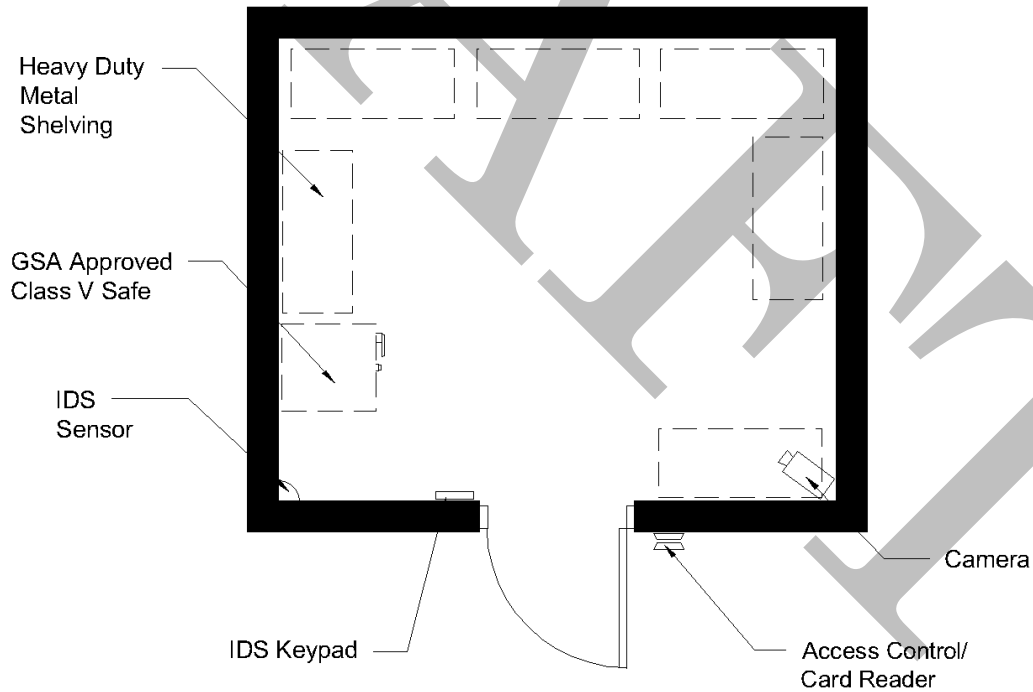
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ROOM FUNCTION <b>Personal Protective Equipment (PPE) Storage</b>		Room Code: <b>CRG-01-13</b>	<b>1.0 INSPECTION SUPPORT SPACES</b>	
ROOM SIGN <b>Storage</b>		10/23/2018 10:56 AM		
Secured storage room for personal protective equipment and supplies. One room is required and must be provided. Personal Protective Equipment Storage is located in close proximity to the inspection area.			<input type="checkbox"/> Cargo	
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
<b>150 SF</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<i>Fire Special Requirements:</i>		
<b>Chapter 14</b>		<b>DIV 22 - PLUMBING</b>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>Chapter 17</b>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	NA	
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>	A-2: Cylinder, keyed individually NOT under a CBP Master	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, K Automatic Door Closer, X Power Transfer Hinge	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>	J - Non-removable hinges if out-swing door.	<i>Plumbing Special</i>		
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<b>Chapter 14</b>		<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<i>Return Register:</i>	RR-2: Return Grille	
<i>Floor Finish:</i>	FF-03 Concrete, troweled, uniform texture and appearance, sealed	<i>Temp Summer</i>	75° (max)	
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Winter</i>	72° (min)	
<i>Wall Construction:</i>	Wall-03 Gypsum Board on #9(10 Ga) Expanded Metal Mesh on Stud, Sound Insulation	<i>Temp Control:</i>	Either: Room or Zone Temperature control	
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Const. / Finish:</i>	CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted	<i>Special Security:</i>	Provide with 1/2" steel bars 6" OC each way for any openings over 96 square Inches.	
<i>Ceiling Remark:</i>		<i>Mech Special Requirements:</i>		
<i>Ceiling Height:</i>	9' min	<b>DIV 26 - ELECTRICAL</b>		
<i>Alternate Construction:</i>	8" CMU- secure- vertical rebar at 16" OC (every block), fully grouted	<b>Chapter 19</b>		
<i>Const Special Requirements:</i>	Install of 9ga metal mesh wall/ ceiling reinforcement must be inspected by CBP prior to cover	<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, as required by code	
<b>DIV 10 - FIXED EQUIPMENT</b>		<i>Other Electrical Receptacles:</i>		
<b>Chapter 14</b>		<i>Electrical Special</i>	(2) Receptacles minimum	
<i>Fixed Equipment 1:</i>	Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H	<b>DIV 26 - LIGHTING</b>		
<i>Fixed Equipment 2:</i>	GSA Class V Safe, minimum of two drawers, FF-L-2740B lock on each drawer	<b>Chapter 19</b>		
<i>Fixed Equipment 3:</i>		<i>Lighting Fixture:</i>	L-2: Lighting Fixture, Recessed 2x2 or 2x4 Acrylic Lens, 80+ CRI Lamp	
		<i>Fixture Types Optional/Special:</i>	N/A	
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	Provide 20 FC at floor level.	



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Stainless Steel Work Table	<i>Phone Outlets:</i>	N/A
<i>Furnishings and Equipment 2:</i>		<i>Data Outlets:</i>	N/A
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
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.		<i>CCTV Camera:</i>	Fixed CCTV wide-angle lens camera, monitored at CCC.
		<i>IDS:</i>	IDS & Alarm, UPS, Keypad control inside, adjacent to door, HSS-2
		<i>Access Control:</i>	Two factor, APL-listed card reader
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		Personal Protective Equipment (PPE) Storage	
		CRG-01-13	



**Personal Protective Equipment (PPE) Storage**

CRG-01-13

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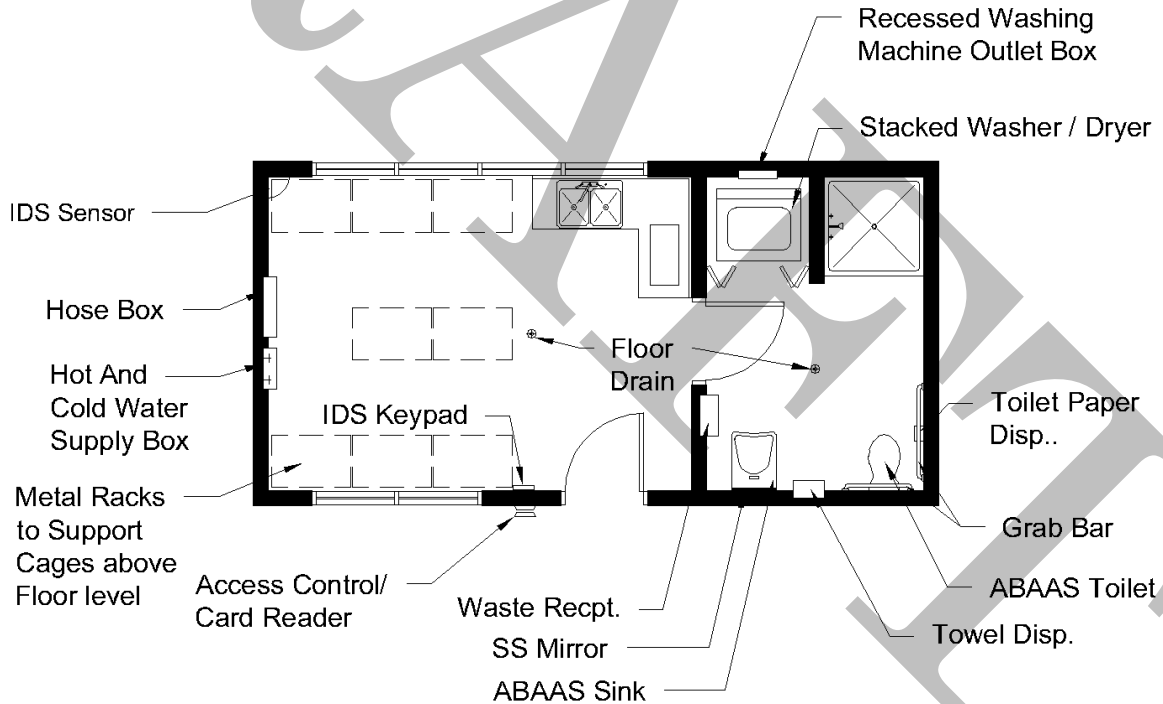


ROOM FUNCTION <b>APHIS/ VS/ Bird Holding</b>		Room Code: <b>CRG-01-14</b>	<b>1.0 INSPECTION SUPPORT SPACES</b>	
ROOM SIGN <b>APHIS/ VS/ Bird Holding</b>		10/26/2018 9:51 AM		
Animal and Plant Health Inspection Services (APHIS)/ Veterinary Services (VS)/ Bird Holding. Wildlife is temporarily held in this 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.			<input checked="" type="checkbox"/> Cargo	
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
<b>Varies</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i> SPKLR-08 Semi-Recessed Pendant <i>Fire Special Requirements:</i>		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<i>Fixtures and Fittings 1:</i> FD-1: Floor Drains - Finished Area <i>Fixtures and Fittings 2:</i> HB-1: Hose and Supply Boxes - Hose Valve - Bent Nose <i>Fixtures and Fittings 3:</i> MS-1: Service / Mop Sink - Two Handle Faucet <i>Fixtures and Fittings 4:</i> FC-3 Wall mounted Two handle faucet <i>Fixtures and Fittings 5:</i> WC-1: Floor Mounted Toilet - For Flush Valve <i>Fixtures and Fittings 6:</i> SH-1 Shower Valve, Head and Handshower <i>Fixtures and Fittings 7:</i> SK-2: Countertop Mount Sink - Two Handle Faucet <i>Plumbing Special</i>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded			
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override			
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master			
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer			
<i>Interior Window:</i>	N/A			
<i>Exterior Windows:</i>	See Other Requirements			
<i>Exterior Window / Door Glazing:</i>	GL-02 Low-E Insulating Glazing, tinted			
<i>Special Requirements:</i>	J - Non-removable hinges. Out-swing door required. X. Power Transfer Hinge			
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	STC 55: Excellent	<i>Supply Register:</i> S-2: Square Ceiling Diffuser <i>Return Register:</i> RR-2: Return Grille <i>Temp Summer</i> 75° (max) <i>Temp Winter</i> 72° (min) <i>Temp Control:</i> Room: Dedicated Room Temperature control <i>Humidity Range:</i> 30% to 60% <i>Special Security:</i> <i>Mech Special Requirements:</i> See Other Requirements, Mechanical		
<i>Floor Finish:</i>	FF-10 Seamless epoxy-resin flooring system, slope to Floor drain(s).			
<i>Base:</i>	BF-04 Integral with seamless flooring, 8" H			
<i>Wall Construction:</i>	Wall-08 CMU - 8"			
<i>Wall Finish:</i>	N/A N/A			
<i>Ceiling Const. / Finish:</i>	CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted			
<i>Ceiling Remark:</i>				
<i>Ceiling Height:</i>	9' min			
<i>Alternate Construction:</i>				
<i>Const Special Requirements:</i>	Wall finishes must be CMU with epoxy paint, or Ceramic Tile. Flooring to be chemical resistant.			
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Fixed Equipment 1:</i>		<i>Receptacles:</i> R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall <i>Other Electrical Receptacles:</i> <i>Electrical Special</i> Provide two (2) 240VAC outlets for Washer and Dryer. All outlets are GFCI		
<i>Fixed Equipment 2:</i>				
<i>Fixed Equipment 3:</i>	Provide stainless steel table 30" high to support bird containers above floor level, different sizes.			
		<b>DIV 26 - LIGHTING Chapter 19</b>		
		<i>Lighting Fixture:</i> L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens <i>Fixture Types Optional/Special:</i> L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens <i>Lighting Control:</i> LC-1: Light Switch <i>Lighting Special</i> Provide 30 FC on floor.		





DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Laboratory equipment	<i>Phone Outlets:</i>	N/A
<i>Furnishings and Equipment 2:</i>	Washer / Dryer, Full size Stacking	<i>Data Outlets:</i>	N/A
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
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. 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. 4. Negative Pressure: 100% Room Exhaust air, 10 Air changes min. Provide snorkel exhaust at counter.		<i>CCTV Camera:</i>	N/A
		<i>IDS:</i>	N/A
		<i>Access Control:</i>	Two factor, APL-listed card reader, DPS
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		APHIS/ VS/ Bird Holding	
		CRG-01-14	



APHIS/VS/Bird Holding

ATD-04-04

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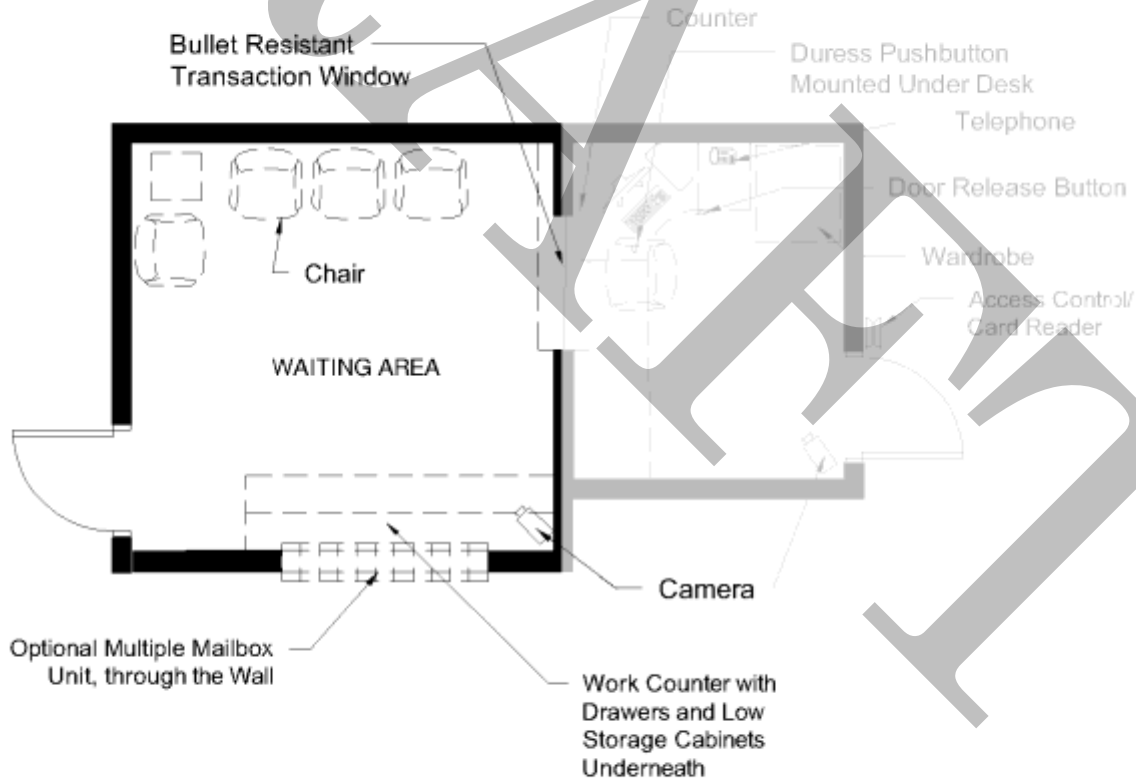
ROOM FUNCTION <b>Public/Broker Waiting Area</b>		Room Code: <b>CRG-02-01</b>	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
ROOM SIGN <b>Reception Area</b>		10/23/2018 11:07 AM		
This area provides access for members of the cargo facility staff, the brokerage, and members of the trade, to the CBP operational support areas.				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
<b>125 SF</b>	<b>1 Staff</b>	<i>Sprinkler Head Type:</i> SPKLR-06 Concealed Recessed Pendant <i>Fire Special Requirements:</i> None		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Type:</i>	SD-STD-01.01, Revision G (Amended) (Opaque) 5 min FE	<i>Fixtures and Fittings 1:</i> N/A		
<i>Door Frame:</i>	Formed, reinforced and welded steel.	<i>Fixtures and Fittings 2:</i>		
<i>Door Lockset Group:</i>	G FF-L-2890B Rated High Security Electromechanical Lock (X-10 or equivalent)	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 4:</i>		
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer	<i>Fixtures and Fittings 5:</i>		
<i>Interior Window:</i>	Transaction window, Level 3 bullet resistant, SS speaker port or baffle frame	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Windows:</i>		<i>Fixtures and Fittings 7:</i>		
<i>Exterior Window / Door Glazing:</i>		<i>Plumbing Special</i>		
<i>Special Requirements:</i>	Windows where included, lightly tinted and include mini blinds. See below for more requirements	<b>DIV 23 - MECHANICAL Chapter 18</b>		
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<i>Supply Register:</i>		
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<i>Return Register:</i>		
<i>Floor Finish:</i>	FF-04 VCT	<i>Temp Summer</i>	75° (max)	
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Winter</i>	72° (min)	
<i>Wall Construction:</i>	Wall-03 Gypsum Board on #9(10 Ga) Expanded Metal Mesh on Stud, Sound Insulation	<i>Temp Control:</i>		
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Const. / Finish:</i>	CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted	<i>Special Security:</i>		
<i>Ceiling Remark:</i>		<i>Mech Special Requirements:</i>	Refer to General Work Area for room requirements	
<i>Ceiling Height:</i>	9' min	<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Alternate Construction:</i>		<i>Receptacles:</i>	N/A	
<i>Const Special Requirements:</i>		<i>Other Electrical Receptacles:</i>		
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Electrical Special</i>		
<i>Fixed Equipment 1:</i>	Mail Boxes, Work Counter, Cabinets below	<b>DIV 26 - LIGHTING Chapter 19</b>		
<i>Fixed Equipment 2:</i>		<i>Lighting Fixture:</i>		
<i>Fixed Equipment 3:</i>	Provide multi-slot unit with compartments approx. 12"W x 12" D x 4" H. Verify quantity with facility	<i>Fixture Types Optional/Special:</i>	L-15: Lighting Fixture, Surface Mounted Task Light	
		<i>Lighting Control:</i>	LC-9: Individual control for task light	
		<i>Lighting Special</i>	Refer to General Work Area for room requirements.	



DIV 10 - FURNISHINGS AND EQUIPMENT		Chapter 14
Furnishings and Equipment 1:		
Furnishings and Equipment 2:	Commercial Grade Waiting Seating (Ganged)	
Furnishings and Equipment 3:	Literature rack, Lounge Chair	
OTHER REQUIREMENTS		
Bullet Resistant Protection shall be provided, see Chapter 21 for additional security details.		
Installation of #9(10 Ga) expanded metal mesh 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.		

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:		

**SCHEMATIC PLAN** **Public/Broker Waiting Area** **CRG-02-01**



**Public/Broker Waiting Area**

CRG-02-01

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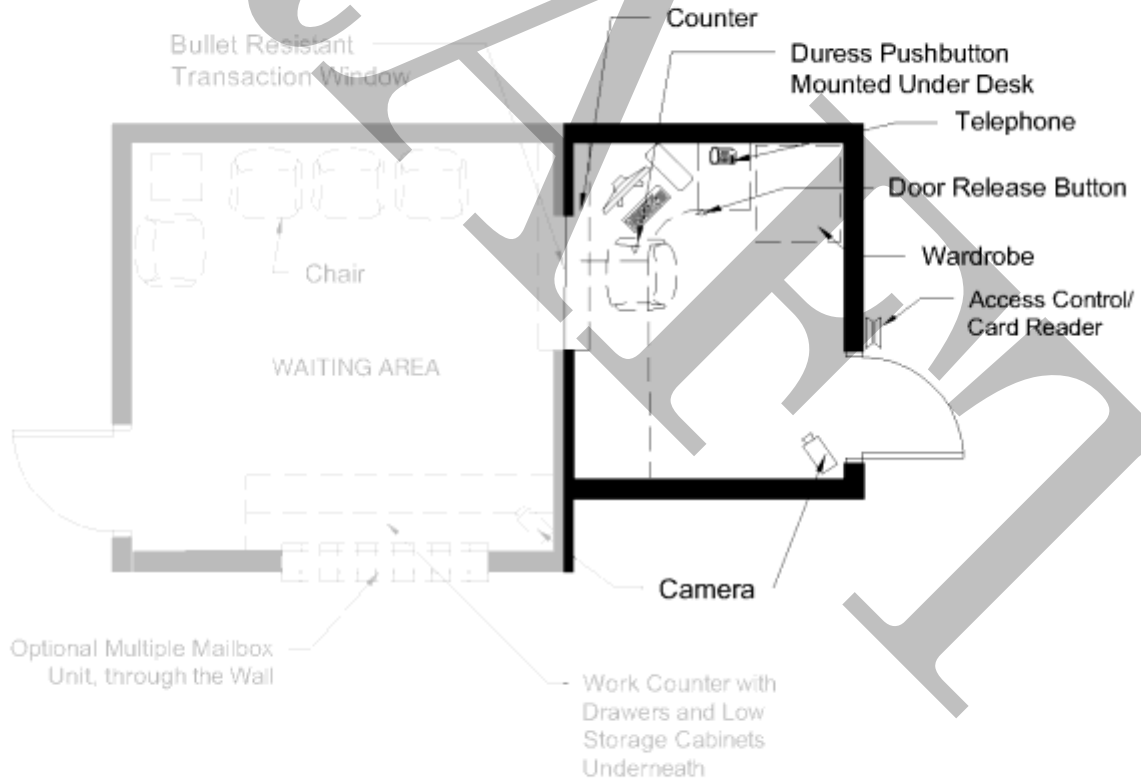
<b>ROOM FUNCTION</b> Public/ Broker Reception Workstation		<b>Room Code:</b> CRG-02-02	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Reception		5/18/2018 1:55 PM		
This area provides access for members of the cargo facility staff, the Brokerage, and members of the trade, to the CBP operational support. Locate near additional filing storage space.				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
80 SF	1 Staff	<i>Sprinkler Head Type:</i>	SPKLR-06 Concealed Recessed Pendant	
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>	None	
<i>Door Type:</i>	A-A Wood, Full flush, Solid core, 5 layers	<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	N/A	
<i>Door Lockset Group:</i>	B Mortise Lever Lockset w/ Thumb Turn - Entrance Function	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, E Door Threshold	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>		<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>	Alt. Door. B-B Hollow Metal	<i>Plumbing Special</i>		
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	N/A	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-09 Carpet Tile	<i>Return Register:</i>	RR-2: Return Grille	
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Summer</i>	75° (max)	
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Winter</i>	72° (min)	
<i>Wall Finish:</i>	WF-01: Gypsum Board, 5/8" Regular, Painted	<i>Temp Control:</i>	T-1: Flush Mounted Wall Temp Sensor	
<i>Ceiling Const. / Finish:</i>	CF-03: Acoustic Ceiling Tile, Suspended	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Remark:</i>		<i>Special Security:</i>		
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>	S-1, 4, RR-1 registers are options	
<i>Alternate Construction:</i>		<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Const Special Requirements:</i>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 1:</i>	80 SF Workstation	<i>Electrical Special</i>		
<i>Fixed Equipment 2:</i>		<b>DIV 26 - LIGHTING Chapter 19</b>		
<i>Fixed Equipment 3:</i>		<i>Lighting Fixture:</i>	L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp	
		<i>Fixture Types Optional/Special:</i>	L-15: Lighting Fixture, Surface Mounted Task Light	
		<i>Lighting Control:</i>	LC-9: Individual control for task light	
		<i>Lighting Special</i>		



<b>DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14</b>	
<i>Furnishings and Equipment 1:</i>	Lounge Chair, Side (guest) Chair(s), Task Chair
<i>Furnishings and Equipment 2:</i>	Computer, printer, telephone, Literature rack
<i>Furnishings and Equipment 3:</i>	Wardrobe, lockable, 48" tall (minimum)
<b>OTHER REQUIREMENTS</b>	
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.	

<b>DIV 27 - COMMUNICATIONS Chapter 20</b>	
<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	
<b>DIV 28 - SECURITY Chapter 21</b>	
<i>CCTV Camera:</i>	Fixed CCTV wide-angle lens camera, monitored at CCC.
<i>IDS:</i>	N/A
<i>Access Control:</i>	Pushbutton release for controlled entry, DPS
<i>Duress System</i>	Duress pushbutton, concealed from public view, hardware to prevent accidental activation
<i>Security Special Requirements:</i>	Door release button at transaction window to control access. Two factor APL-Listed Card Reader, DPS

**SCHEMATIC PLAN Public/ Broker Reception Workstation CRG-02-02**



**Public/Broker Reception Workstation**

CRG-02-02

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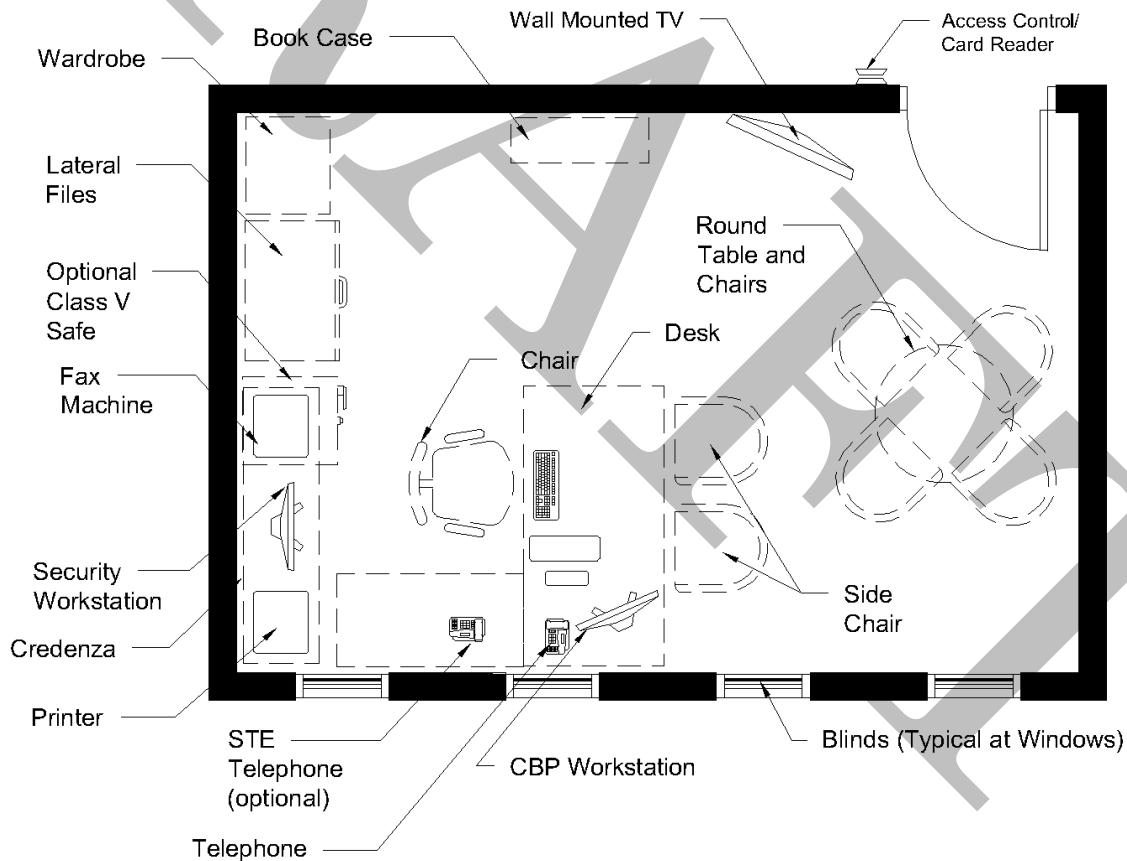
ROOM FUNCTION <b>Port Director's Office</b>		Room Code: <b>CRG-02-03</b>	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
ROOM SIGN <b>Port Director</b>		10/30/2018 10:08 AM		
<p>The Port Director's Office is dedicated for the use by CBP Port Director (PD) to conduct day-to-day operations of the cargo facility. 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.</p>			<input type="checkbox"/> Cargo	
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
<b>225 SF</b>	<b>1 Staff + 2 to 4 Visitors</b>	<i>Sprinkler Head Type:</i>	SPKLR-06 Concealed Recessed Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
<b>Chapter 14</b>		<i>Fire Special Requirements:</i>	None	
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<i>Fixtures and Fittings 1:</i>	N/A	
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 2:</i>		
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 4:</i>		
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer	<i>Fixtures and Fittings 5:</i>		
<i>Interior Window:</i>		<i>Fixtures and Fittings 6:</i>		
<i>Exterior Windows:</i>	Aluminum Framed Windows	<i>Fixtures and Fittings 7:</i>		
<i>Exterior Window / Door Glazing:</i>	GL-06 Laminated, Mirrored, (one-way) glazing	<i>Plumbing Special</i>	None	
<i>Special Requirements:</i>	Door Hardware: X. Power Transfer Hinge.	<b>DIV 23 - MECHANICAL</b>		
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>Chapter 18</b>		<b>Chapter 14</b>
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-09 Carpet Tile	<i>Return Register:</i>	RR-2: Return Grille	
<i>Base:</i>	BF-01 Rubber Base	<i>Temp Summer</i>	75° (max)	
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Winter</i>	72° (min)	
<i>Wall Finish:</i>	WF-01: Gypsum Board, 5/8" Regular, Painted	<i>Temp Control:</i>	T-1: Flush Mounted Wall Temperature Sensor	
<i>Ceiling Const. / Finish:</i>	CF-01: Gypsum Board, 5/8" Regular, Painted	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Remark:</i>		<i>Special Security:</i>		
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>	S- 1, 4, RR- 1 registers are options.	
<i>Alternate Construction:</i>	Acoustic Tile permitted if walls go slab to slab or in conjunction with CF-01	<b>DIV 26 - ELECTRICAL</b>		
<i>Const Special Requirements:</i>	Mini-blinds at windows.	<b>Chapter 19</b>		<b>Chapter 19</b>
<b>DIV 10 - FIXED EQUIPMENT</b>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>Chapter 14</b>		<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 1:</i>		<i>Electrical Special</i>	Coordinate receptacles with furniture.	
<i>Fixed Equipment 2:</i>		<b>DIV 26 - LIGHTING</b>		
<i>Fixed Equipment 3:</i>	See in "Other Requirements"	<b>Chapter 19</b>		<b>Chapter 19</b>
		<i>Lighting Fixture:</i>	L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp	
		<i>Fixture Types Optional/Special:</i>	L-7: Lighting Fixture, Recessed 6" Downlight	
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	Provide 40 FC at working surface, L-15 Task or L-13 under cabinet lighting at desk.	



<b>DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14</b>	
<i>Furnishings and Equipment 1:</i>	Computer(s), printer, telephone, Facsimile
<i>Furnishings and Equipment 2:</i>	Exec. Desk, Return & Task Chair, Bookcase, Security Workstation
<i>Furnishings and Equipment 3:</i>	Chair(s), Small Conf table w/ 4 chairs, Wardrobe, lockable, 48" tall (minimum)
<b>OTHER REQUIREMENTS</b>	
GSA Class V Safe, minimum of two drawers, FF-L-2740B lock on each drawer is optional. Provide DHS/CBP flags. Special Requirements Door: J-Non-removable hinges if out-swing	
Furniture: Credenza, Bookcase, Lateral File, Exec. Desk, Return & Task Chair, Side (guest) Chair(s), Small Conf table w/ 4 chairs	
CCTV/ duress system requirement and location will be determined by SMD.	

<b>DIV 27 - COMMUNICATIONS Chapter 20</b>	
<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	(2) Phone outlets, one each at desk and credenza.
<b>DIV 28 - SECURITY Chapter 21</b>	
<i>CCTV Camera:</i>	N/A
<i>IDS:</i>	N/A
<i>Access Control:</i>	Two factor, APL-listed card reader, DPS
<i>Duress System</i>	N/A
<i>Security Special Requirements:</i>	Verify with Port Director location of Security Workstation.

**SCHEMATIC PLAN Port Director's Office CRG-02-03**



**Port Director's Office**  
CRG-02-03

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ROOM FUNCTION <b>Assistant Port Director's Office</b>		Room Code: <b>CRG-02-04</b>	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
ROOM SIGN <b>Assistant Port Director</b>		10/30/2018 10:11 AM		
<p>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.</p>				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
<b>175 SF</b>	<b>1 Staff + 2 Visitors</b>	<i>Sprinkler Head Type:</i>	SPKLR-06 Concealed Recessed Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
<b>Chapter 14</b>		<i>Fire Special Requirements:</i>	None	
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<i>Fixtures and Fittings 1:</i>	N/A	
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 2:</i>		
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 4:</i>		
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer	<i>Fixtures and Fittings 5:</i>		
<i>Interior Window:</i>	Wood Framed interior Window, 1/4" tempered glazing	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Windows:</i>	Window Ext 01 Aluminum Framed Windows, Steel reinforced	<i>Fixtures and Fittings 7:</i>		
<i>Exterior Window / Door Glazing:</i>	GL-06 Laminated, Mirrored, (one-way) glazing	<i>Plumbing Special</i>	None	
<i>Special Requirements:</i>	See "Other Requirements"			
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<b>Chapter 14</b>		<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Return Register:</i>	RR-2: Return Grille	
<i>Floor Finish:</i>	FF-09 Carpet Tile	<i>Temp Summer</i>	75° (max)	
<i>Base:</i>	BF-01 Rubber Base	<i>Temp Winter</i>	72° (min)	
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Control:</i>	T-1: Flush Mounted Wall Temperature Sensor	
<i>Wall Finish:</i>	WF-01: Gypsum Board, 5/8" Regular, Painted	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Const. / Finish:</i>	CF-03: Acoustic Ceiling Tile, Suspended	<i>Special Security:</i>		
<i>Ceiling Remark:</i>		<i>Mech Special Requirements:</i>	S- 1, 4, RR- 1 registers are options.	
<i>Ceiling Height:</i>	9' min			
<i>Alternate Construction:</i>	5/8" Gypsum Ceiling, Painted.	<b>DIV 26 - ELECTRICAL</b>		
<i>Const Special Requirements:</i>	Mini-blinds at windows.	<b>Chapter 19</b>		
<b>DIV 10 - FIXED EQUIPMENT</b>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>Chapter 14</b>		<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 1:</i>		<i>Electrical Special</i>	Coordinate receptacles with furniture.	
<i>Fixed Equipment 2:</i>		<b>DIV 26 - LIGHTING</b>		
<i>Fixed Equipment 3:</i>		<b>Chapter 19</b>		
		<i>Lighting Fixture:</i>	L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp	
		<i>Fixture Types Optional/Special:</i>	L-7: Lighting Fixture, Recessed 6" Downlight	
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	Provide 40 FC at working surface, L-15 Task or L-13 under cabinet lighting at desk.	

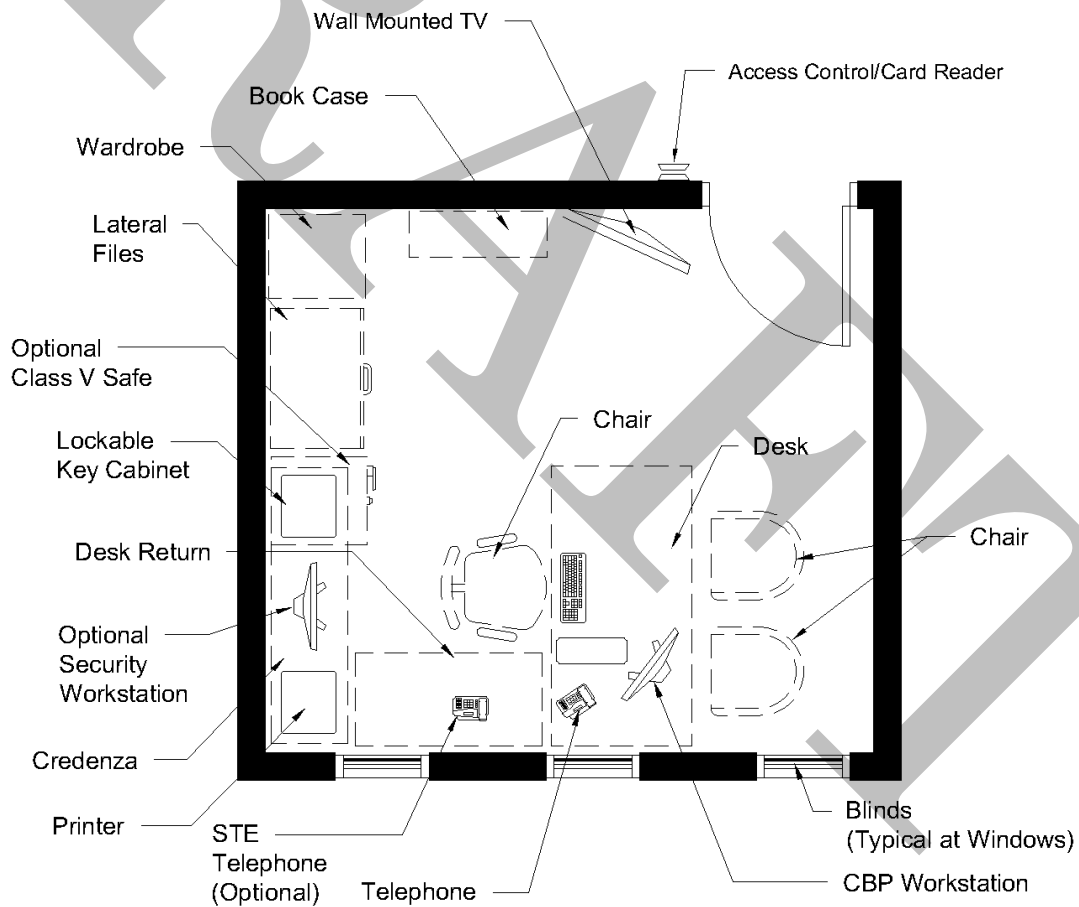




<b>DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14</b>	
<i>Furnishings and Equipment 1:</i>	Exec. Desk, Return & Task Chair, Bookcase, Credenza
<i>Furnishings and Equipment 2:</i>	Security Workstation, Side (guest) Chair(s), Wardrobe, lockable, 48" tall (minimum)
<i>Furnishings and Equipment 3:</i>	Computer, printer, telephone, Facsimile, Lockable key cabinet
<b>OTHER REQUIREMENTS</b>	
GSA Class V Safe, minimum of two drawers, FF-L-2740B lock on each drawer is optional. Security workstation optional. Provide whiteboard/tackboard per OFO HQ direction. Alt 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.	

<b>DIV 27 - COMMUNICATIONS Chapter 20</b>	
<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	
<b>DIV 28 - SECURITY Chapter 21</b>	
<i>CCTV Camera:</i>	N/A
<i>IDS:</i>	N/A
<i>Access Control:</i>	Two factor, APL-listed card reader, DPS
<i>Duress System</i>	N/A
<i>Security Special Requirements:</i>	See " Other Requirements"

**SCHEMATIC PLAN Assistant Port Director's Office CRG-02-04**



**Assistant Port Director's Office**  
CRG-02-04

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**U.S. Customs and Border Protection**

<b>ROOM FUNCTION</b> Chief's Office		<b>Room Code:</b> CRG-02-05	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Chief Officer		5/18/2018 1:55 PM		
<p>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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
150 SF	1 Staff + 2 Visitors	<b>Sprinkler Head Type:</b> SPKLR-08 Semi-Recessed Pendant <b>Fire Special Requirements:</b> None		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<b>DIV 22 - PLUMBING Chapter 17</b>		
<b>Door Type:</b>	B-B-01 Hollow Metal, Full flush, seamless	<b>Fixtures and Fittings 1:</b> N/A <b>Fixtures and Fittings 2:</b> <b>Fixtures and Fittings 3:</b> <b>Fixtures and Fittings 4:</b> <b>Fixtures and Fittings 5:</b> <b>Fixtures and Fittings 6:</b> <b>Fixtures and Fittings 7:</b>		
<b>Door Frame:</b>	HM-1 Interior, 12 gauge hollow metal, fully welded	<b>Plumbing Special</b> None		
<b>Door Lockset Group:</b>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<b>DIV 23 - MECHANICAL Chapter 18</b>		
<b>Door Hardware Cylinder:</b>	A-1: Cylinder, keyed individually under a CBP Master	<b>Supply Register:</b> S-2: Square Ceiling Diffuser <b>Return Register:</b> RR-2: Return Grille <b>Temp Summer:</b> 75° (max) <b>Temp Winter:</b> 72° (min) <b>Temp Control:</b> T-1: Flush Mounted Wall Temperature Sensor <b>Humidity Range:</b> 30% to 60% <b>Special Security:</b>		
<b>Door Hardware Group:</b>	B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer	<b>Mech Special Requirements:</b> S- 1, 4, RR- 1 registers are options.		
<b>Interior Window:</b>	Hollow Metal Frame, Painted, 1/4" tempered glazing	<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<b>Exterior Windows:</b>	Aluminum Framed Windows, Steel reinforced	<b>Receptacles:</b> R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall <b>Other Electrical Receptacles:</b> <b>Electrical Special:</b> None		
<b>Exterior Window / Door Glazing:</b>	GL-06 Laminated, Mirrored, (one-way) glazing	<b>DIV 26 - LIGHTING Chapter 19</b>		
<b>Special Requirements:</b>	See "Other Requirements"	<b>Lighting Fixture:</b> L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp <b>Fixture Types Optional/Special:</b> L-7: Lighting Fixture, Recessed 6" Downlight <b>Lighting Control:</b> LC-4: Combination Wall Switch with Occupancy Sensor <b>Lighting Special</b> Provide 40 FC at working surface, L-15 Task or L-13 under cabinet lighting at desk.		
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>				
<b>Acoustic Separation:</b>	STC 45: Minimum sound isolation			
<b>Floor Finish:</b>	FF-09 Carpet Tile			
<b>Base:</b>	BF-01 Rubber Base			
<b>Wall Construction:</b>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation			
<b>Wall Finish:</b>	WF-01: Gypsum Board, 5/8" Regular, Painted			
<b>Ceiling Const. / Finish:</b>	CF-03: Acoustic Ceiling Tile, Suspended			
<b>Ceiling Remark:</b>				
<b>Ceiling Height:</b>	9' min			
<b>Alternate Construction:</b>	5/8" Gypsum Ceiling, Painted			
<b>Const Special Requirements:</b>	Mini-blinds at windows. Windows, where included, lightly tinted			
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>				
<b>Fixed Equipment 1:</b>				
<b>Fixed Equipment 2:</b>				
<b>Fixed Equipment 3:</b>				

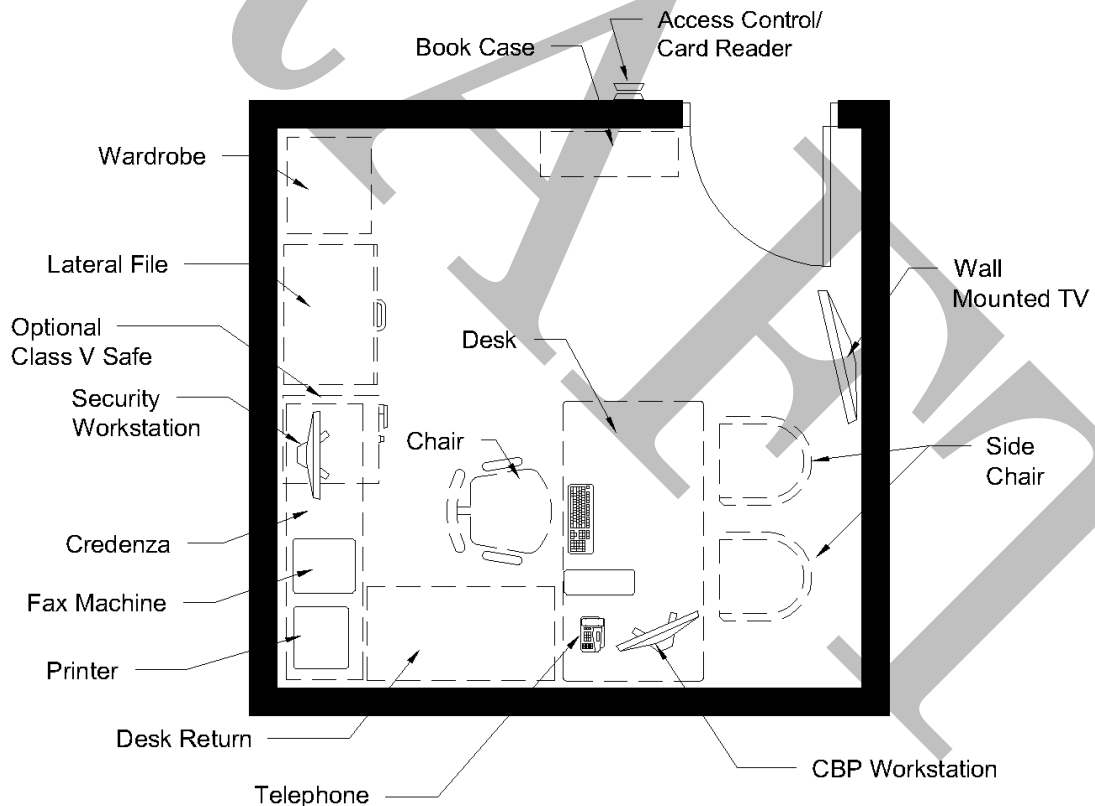


**U.S. Customs and Border Protection**

DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14	
<i>Furnishings and Equipment 1:</i>	Computer(s), printer, telephone, Facsimile, Security Workstation
<i>Furnishings and Equipment 2:</i>	Exec. Desk, Return & Task Chair, Chair(s), Credenza, Bookcase, Lateral File
<i>Furnishings and Equipment 3:</i>	Wardrobe, lockable, 48" tall (minimum)
OTHER REQUIREMENTS	
GSA Class V Safe, minimum of two drawers, FF-L-2740B lock on each drawer is optional. Exterior window is optional.	
Alt door: A-A Wood, full flush. Requires interior window w/ full width view into work area.	
Door Hardware: X. Power Transfer Hinge.	

DIV 27 - COMMUNICATIONS Chapter 20	
<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	
DIV 28 - SECURITY Chapter 21	
<i>CCTV Camera:</i>	N/A
<i>IDS:</i>	N/A
<i>Access Control:</i>	Two factor, APL-listed card reader, DPS
<i>Duress System</i>	N/A
<i>Security Special Requirements:</i>	

**SCHEMATIC PLAN Chief's Office CRG-02-05**



**Chief's Office**  
CRG-02-05

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**U.S. Customs and Border Protection**

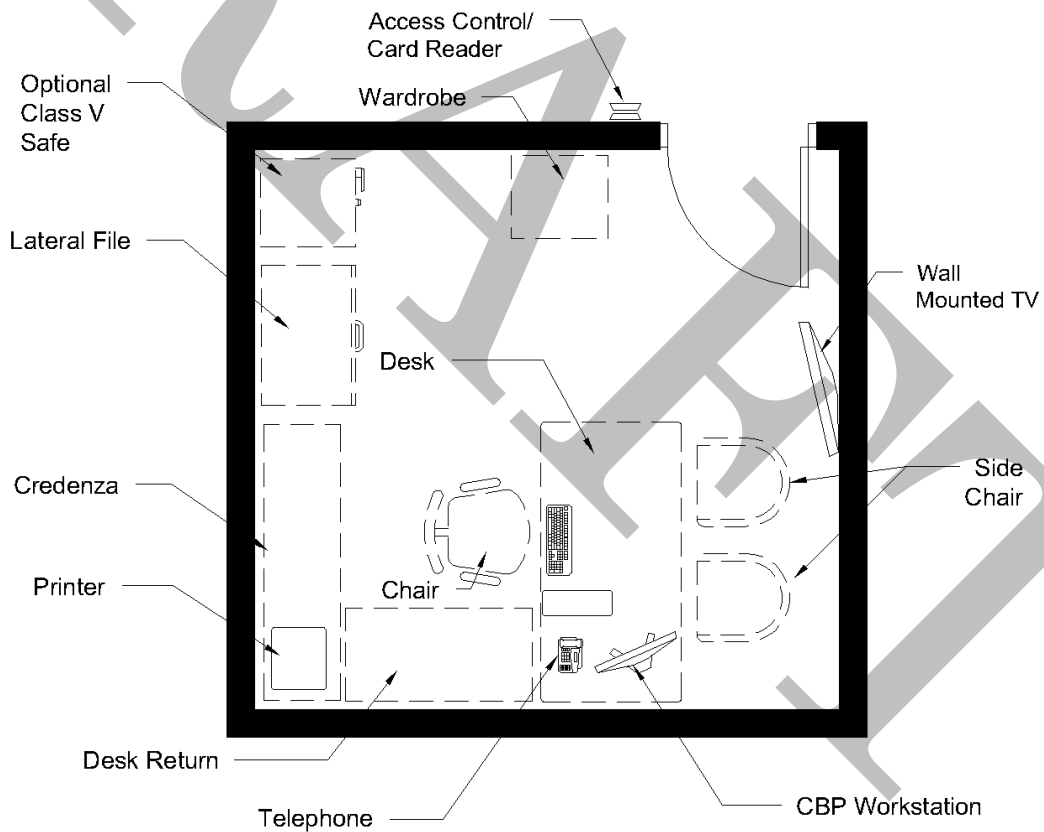
<b>ROOM FUNCTION</b> <b>Supervisor's Office</b>		<b>Room Code:</b> <b>CRG-02-06</b>	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
<b>ROOM SIGN</b> <b>Supervisor</b>		5/18/2018 1:55 PM		
<p>The CBP Supervisor manages the day-to-day activities and performance of CBPOs; additionally, the CBP Supervisor is available to the public, as required. The CBP Supervisor's Office area is located adjacent to the CBPO work areas and generally in the the CBP Operational Support area. A minimum of one office is always required. At large facilities, it may be required to overlook inspection areas.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
<b>150 SF</b>	<b>1 Staff + 2 Visitors</b>	<b>Sprinkler Head Type:</b> SPKLR-08 Semi-Recessed Pendant <b>Fire Special Requirements:</b> None		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<b>DIV 22 - PLUMBING Chapter 17</b>		
<b>Door Type:</b>	B-B-01 Hollow Metal, Full flush, seamless	<b>Fixtures and Fittings 1:</b> N/A		
<b>Door Frame:</b>	HM-1 Interior, 12 gauge hollow metal, fully welded	<b>Fixtures and Fittings 2:</b>		
<b>Door Lockset Group:</b>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<b>Fixtures and Fittings 3:</b>		
<b>Door Hardware Cylinder:</b>	A-1: Cylinder, keyed individually under a CBP Master	<b>Fixtures and Fittings 4:</b>		
<b>Door Hardware Group:</b>	B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer	<b>Fixtures and Fittings 5:</b>		
<b>Interior Window:</b>	Hollow Metal Frame, Painted, 1/4" tempered glazing	<b>Fixtures and Fittings 6:</b>		
<b>Exterior Windows:</b>	Aluminum Framed Windows, Steel reinforced	<b>Fixtures and Fittings 7:</b>		
<b>Exterior Window / Door Glazing:</b>	GL-06 Laminated, Mirrored, (one-way) glazing	<b>Plumbing Special</b> None		
<b>Special Requirements:</b>	See "Other Requirements"			
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<b>Acoustic Separation:</b>	STC 45: Minimum sound isolation	<b>Supply Register:</b> S-2: Square Ceiling Diffuser		
<b>Floor Finish:</b>	FF-09 Carpet Tile	<b>Return Register:</b> RR-2: Return Grille		
<b>Base:</b>	BF-01 Rubber Base	<b>Temp Summer</b> 75° (max)		
<b>Wall Construction:</b>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<b>Temp Winter</b> 72° (min)		
<b>Wall Finish:</b>	WF-01: Gypsum Board, 5/8" Regular, Painted	<b>Temp Control:</b> T-1: Flush Mounted Wall Temperature Sensor		
<b>Ceiling Const. / Finish:</b>	CF-03: Acoustic Ceiling Tile, Suspended	<b>Humidity Range:</b> 30% to 60%		
<b>Ceiling Remark:</b>		<b>Special Security:</b>		
<b>Ceiling Height:</b>	9'-0"	<b>Mech Special Requirements:</b> S- 1, 4, RR- 1 registers are options.		
<b>Alternate Construction:</b>	5/8" Gypsum Ceiling, Painted			
<b>Const Special Requirements:</b>	Mini-blinds at windows.			
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<b>Fixed Equipment 1:</b>	GSA Class V Safe, minimum of two drawers, FF-L-2740B lock on each drawer	<b>Receptacles:</b> R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall		
<b>Fixed Equipment 2:</b>	Wall mount for video monitor(s)	<b>Other Electrical Receptacles:</b>		
<b>Fixed Equipment 3:</b>		<b>Electrical Special</b> None		
		<b>DIV 26 - LIGHTING Chapter 19</b>		
		<b>Lighting Fixture:</b> L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp		
		<b>Fixture Types Optional/Special:</b> L-7: Lighting Fixture, Recessed 6" Downlight		
		<b>Lighting Control:</b> LC-4: Combination Wall Switch with Occupancy Sensor		
		<b>Lighting Special</b> Provide 40 FC at working surface, L-15 Task or L-13 under cabinet lighting at desk.		



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14	
<i>Furnishings and Equipment 1:</i>	Computer(s), printer, telephone, Video Monitor(s)
<i>Furnishings and Equipment 2:</i>	Exec. Desk, Return & Task Chair, Chair(s), Credenza, File Cabinet, Lateral, 4 drawer
<i>Furnishings and Equipment 3:</i>	Wardrobe, lockable, 48" tall (minimum)
OTHER REQUIREMENTS	
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.	
Alt door: A-A Wood, Full Flush. Interior Window: mini blinds, one way reflective film	

DIV 27 - COMMUNICATIONS Chapter 20	
<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	
DIV 28 - SECURITY Chapter 21	
<i>CCTV Camera:</i>	N/A
<i>IDS:</i>	N/A
<i>Access Control:</i>	Two factor, APL-listed card reader, DPS
<i>Duress System</i>	N/A
<i>Security Special Requirements:</i>	

**SCHEMATIC PLAN Supervisor's Office CRG-02-06**



**Supervisor's Office**  
CRG-02-06

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<b>ROOM FUNCTION</b> CBP Officer Workstation		<b>Room Code:</b> CRG-02-07	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
<b>ROOM SIGN</b> [Workstation #]		10/30/2018 10:15 AM		
<p>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 will be located within the CBP Officer Work Area. The Officer's Workstation may be comingled in a larger office environment with various teams.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
24-64 SF per 1 Staff per Workstation		Sprinkler Head Type:		N/A
<b>DIV 08 - DOORS AND WINDOWS</b>		Fire Special Requirements:		None
Chapter 14		<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
Door Type:	N/A	Fixtures and Fittings 1:		N/A
Door Frame:	N/A	Fixtures and Fittings 2:		
Door Lockset Group:	N/A	Fixtures and Fittings 3:		
Door Hardware Cylinder:	N/A	Fixtures and Fittings 4:		
Door Hardware Group:	N/A	Fixtures and Fittings 5:		
Interior Window:	N/A	Fixtures and Fittings 6:		
Exterior Windows:	N/A	Fixtures and Fittings 7:		
Exterior Window / Door Glazing:	N/A	Plumbing Special		None
Special Requirements:	Refer to CBP Officer Work Area for room requirements.	<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		Supply Register:		S-2: Square Ceiling Diffuser
Chapter 14		Return Register:		RR-2: Return Grille
Acoustic Separation:	N/A	Temp Summer		75° (max)
Floor Finish:	N/A	Temp Winter		72° (min)
Base:	N/A	Temp Control:		Zone: Zone Temperature Control
Wall Construction:	N/A	Humidity Range:		30% to 60%
Wall Finish:	N/A	Special Security:		
Ceiling Const. / Finish:	N/A	Mech Special Requirements:		Refer to CBP Officer Work Area for room requirements.
Ceiling Remark:		<b>DIV 26 - ELECTRICAL</b>		<b>Chapter 19</b>
Ceiling Height:		Receptacles:		R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall
Alternate Construction:		Other Electrical Receptacles:		R-1B Receptacle, Quad minimum
Const Special Requirements:	Refer to CBP Officer Work Area for room requirements.	Electrical Special		Workstations not adjacent to wall receive min 1 quadruplex outlet
<b>DIV 10 - FIXED EQUIPMENT</b>		<b>DIV 26 - LIGHTING</b>		<b>Chapter 19</b>
Chapter 14		Lighting Fixture:		L-15: Lighting Fixture, Surface Mounted Task Light
Fixed Equipment 1:	24 - 64 SF Workstation	Fixture Types Optional/Special:		N/A
Fixed Equipment 2:		Lighting Control:		N/A
Fixed Equipment 3:	Wardrobe cabinet is option instead of side chair.	Lighting Special		Provide 50 FC at working surface. LC-9: Individual control for task light



**DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14**

<i>Furnishings and Equipment 1:</i>	Adjustable Task Chair(s), Side (guest) Chair(s)
<i>Furnishings and Equipment 2:</i>	File Cabinet, Lateral, 2 drawer, Wardrobe, lockable, 48" tall (minimum)
<i>Furnishings and Equipment 3:</i>	Computer, printer, telephone

**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.

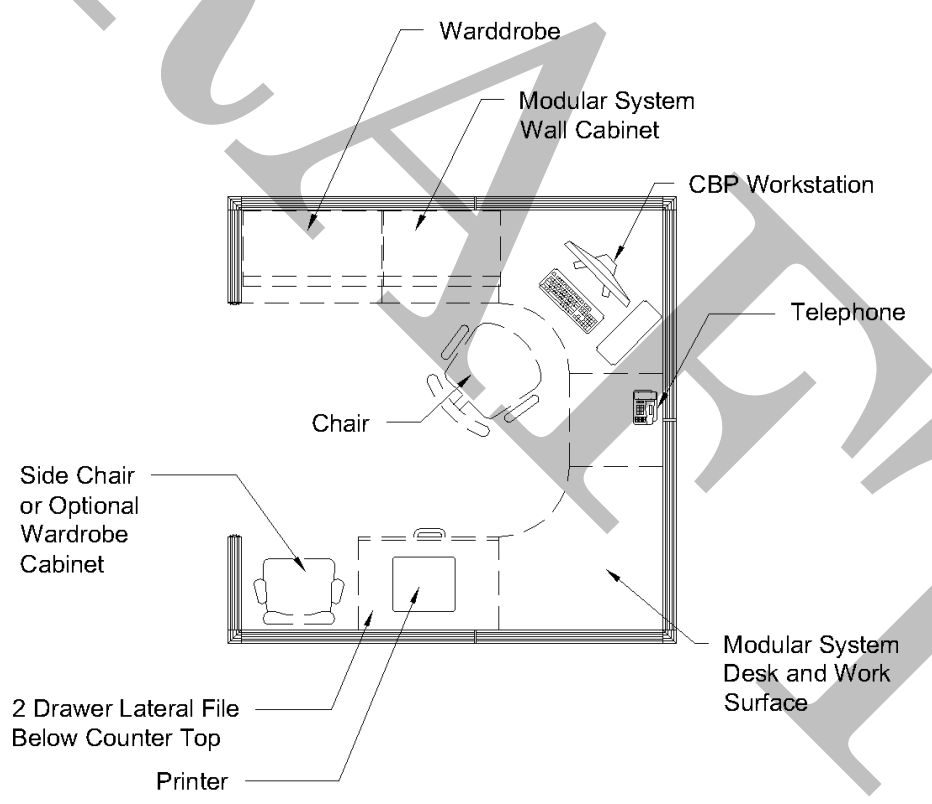
**DIV 27 - COMMUNICATIONS Chapter 20**

<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	Workstation not adjacent to wall receive min 1 voice drop and 2 data drops

**DIV 28 - SECURITY Chapter 21**

<i>CCTV Camera:</i>	N/A
<i>IDS:</i>	N/A
<i>Access Control:</i>	N/A
<i>Duress System</i>	N/A
<i>Security Special Requirements:</i>	

**SCHEMATIC PLAN CBP Officer Workstation CRG-02-07**



**CBP Officer Workstation**  
CRG-02-07

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<b>ROOM FUNCTION</b> CBP Officer Work Area		<b>Room Code:</b> CRG-02-08	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
<b>ROOM SIGN</b> [Workstation #]		5/18/2018 1:56 PM		
<p>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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
64 SF per	1 Staff per Workstation	<i>Sprinkler Head Type:</i>	SPKLR-06 Concealed Recessed Pendant	
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>	None	
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	N/A	
<i>Door Lockset Group:</i>	B Mortise Lever Lockset w/ Thumb Turn - Entrance Function	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	Hollow Metal Frame, Painted, 1/4" tempered glazing	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>	Aluminum Framed Windows	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>	GL-02 Low-E Insulating Glazing, tinted	<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>	Interior Window where included lightly tinted, tempered glass, mini blinds. Alt Door: A-A Wood	<i>Plumbing Special</i>	None	
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-17 Anti-static VCT	<i>Return Register:</i>	RR-2: Return Grille	
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Summer</i>	75° (max)	
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Winter</i>	72° (min)	
<i>Wall Finish:</i>	WF-01: Gypsum Board, 5/8" Regular, Painted	<i>Temp Control:</i>	Zone: Zone Temperature Control	
<i>Ceiling Const. / Finish:</i>	CF-03: Acoustic Ceiling Tile, Suspended	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Remark:</i>		<i>Special Security:</i>		
<i>Ceiling Height:</i>	9'-0" (min), higher preferred above 10 workstations	<i>Mech Special Requirements:</i>		
<i>Alternate Construction:</i>	Ceiling: CF-01: Gypsum Board, 5/8" Regular, Painted	<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Const Special Requirements:</i>	Provide mini-blinds	<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>	R-1B Receptacle, Quad minimum	
<i>Fixed Equipment 1:</i>	64 SF Workstation	<i>Electrical Special</i>	Workstations not adjacent to wall receive min 1 quadruplex outlet	
<i>Fixed Equipment 2:</i>		<b>DIV 26 - LIGHTING Chapter 19</b>		
<i>Fixed Equipment 3:</i>		<i>Lighting Fixture:</i>		
		<i>Fixture Types Optional/Special:</i>	L-15: Lighting Fixture, Surface Mounted Task Light	
		<i>Lighting Control:</i>	LC-5: Combination Wall Switch with Occupancy Sensor & Dimmer	
		<i>Lighting Special</i>	Provide 50 FC at working surface. LC-9: Individual control for task light	

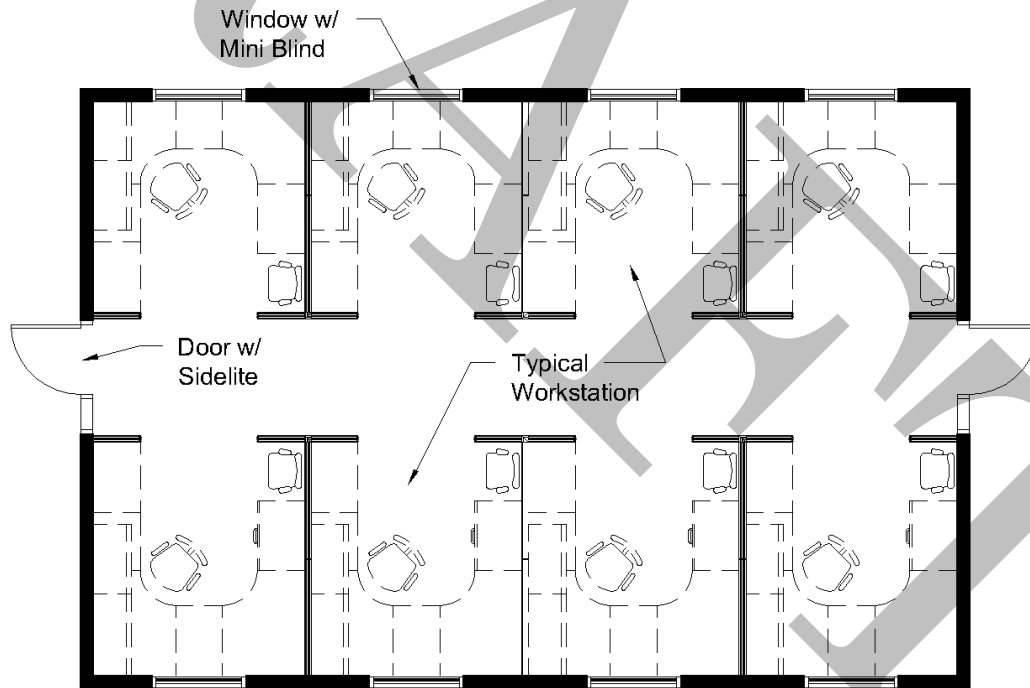




<b>DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14</b>	
<i>Furnishings and Equipment 1:</i>	Recycle Bin, Waste Bin
<i>Furnishings and Equipment 2:</i>	N/A
<i>Furnishings and Equipment 3:</i>	N/A
<b>OTHER REQUIREMENTS</b>	
CBP operational requirements will determine number of workstations (each workstation is 64 SF). The local CBP Command Center (CCC) if not located in a separate room, will occupy 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.	

<b>DIV 27 - COMMUNICATIONS Chapter 20</b>	
<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	Workstation not adjacent to wall receive min 1 voice drop and 2 data drops
<b>DIV 28 - SECURITY Chapter 21</b>	
<i>CCTV Camera:</i>	N/A
<i>IDS:</i>	N/A
<i>Access Control:</i>	N/A
<i>Duress System</i>	N/A
<i>Security Special Requirements:</i>	If entering from processing floor provide Two Factor, APL-Listed Card Reader, DPS/ unrestricted egress

**SCHEMATIC PLAN CBP Officer Work Area CRG-02-08**



**8-Workstation Configuration**  
Layout Example for Reference Only

**CBP Officer Work Area**  
CRG-02-08

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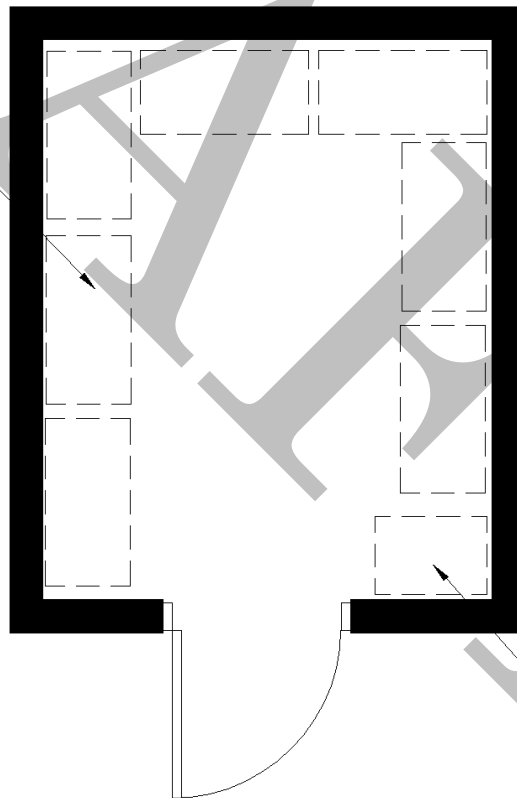
**U.S. Customs and Border Protection**

<b>ROOM FUNCTION</b> <b>Supply/Storage Room</b>		<b>Room Code:</b> <b>CRG-02-09</b>	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
<b>ROOM SIGN</b> <b>Storage</b>		5/18/2018 1:56 PM		
<p>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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
<b>100 SF (min)</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i> SPKLR-08 Semi-Recessed Pendant		
<b>DIV 08 - DOORS AND WINDOWS</b>		<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
<b>Chapter 14</b>		<i>Fire Special Requirements:</i>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<i>Fixtures and Fittings 1:</i>		NA
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 2:</i>		
<i>Door Lockset Group:</i>	B Mortise Lever Lockset w/ Thumb Turn - Entrance Function	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 4:</i>		
<i>Door Hardware Group:</i>	D Door Stop	<i>Fixtures and Fittings 5:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Plumbing Special</i>		
<i>Special Requirements:</i>	J - Non-removable hinges if out-swing door.	<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>Chapter 14</b>		
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<i>Supply Register:</i>		S-2: Square Ceiling Diffuser
<i>Floor Finish:</i>	FF-02 Concrete, troweled, uniform texture and appearance	<i>Return Register:</i>		RR-2: Return Grille
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Summer</i>		75° (max)
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Winter</i>		72° (min)
<i>Wall Finish:</i>	WF-01: Gypsum Board, 5/8" Regular, Painted	<i>Temp Control:</i>		Zone: Zone Temperature Control
<i>Ceiling Const. / Finish:</i>	CF-03: Acoustic Ceiling Tile, Suspended	<i>Humidity Range:</i>		30% to 60%
<i>Ceiling Remark:</i>		<i>Special Security:</i>		
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>		
<i>Alternate Construction:</i>	Floor: VCT	<b>DIV 26 - ELECTRICAL</b>		<b>Chapter 19</b>
<i>Const Special Requirements:</i>	If located with Violator area, all construction and finishes to match adjoining areas.	<i>Receptacles:</i>		R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall
<b>DIV 10 - FIXED EQUIPMENT</b>		<b>Chapter 14</b>		
<i>Fixed Equipment 1:</i>	Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H	<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 2:</i>		<i>Electrical Special</i>		
<i>Fixed Equipment 3:</i>		<b>DIV 26 - LIGHTING</b>		<b>Chapter 19</b>
		<i>Lighting Fixture:</i>		L-2: Lighting Fixture, Recessed 2x2 or 2x4 Acrylic Lens, 80+ CRI Lamp
		<i>Fixture Types Optional/Special:</i>		
		<i>Lighting Control:</i>		LC-4: Combination Wall Switch with Occupancy Sensor
		<i>Lighting Special</i>		Provide 20 FC at floor level



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	File Cabinet, Standard 4 drawer	<i>Phone Outlets:</i>	N/A
<i>Furnishings and Equipment 2:</i>		<i>Data Outlets:</i>	N/A
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
Verify quantities of shelving and file cabinets.		<i>CCTV Camera:</i>	N/A
		<i>IDS:</i>	N/A
		<i>Access Control:</i>	N/A
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		Supply/Storage Room	
		CRG-02-09	

Industrial Shelving



Standard 4  
Drawer File  
Cabinet

Supply/Storage Room

CRG-02-09

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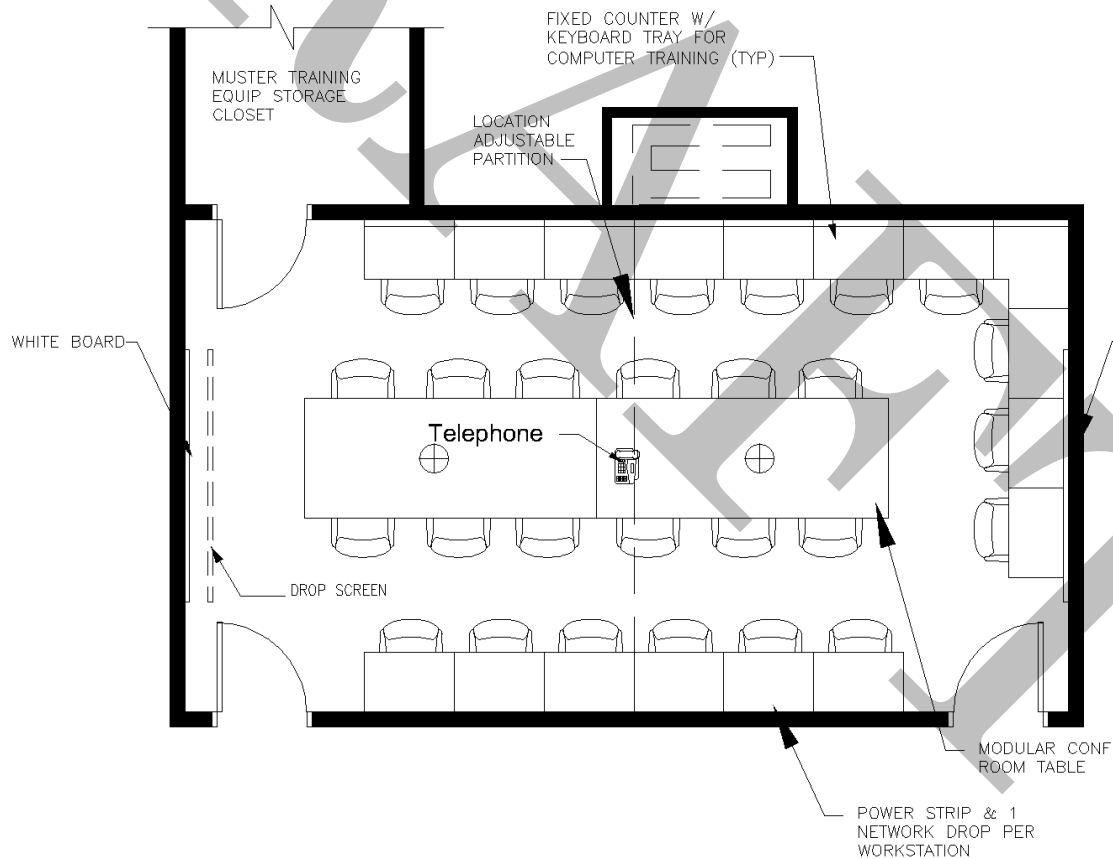
<b>ROOM FUNCTION</b> Conference Room - Muster / Training		<b>Room Code:</b> CRG-02-10	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Muster / Training		5/18/2018 1:56 PM		
<p>The conference room/muster area is used to conduct general staff meetings, CBPO musters, and meetings with other Federal 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.</p>				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
240-350 SF	8 to 10 Occupants	<i>Sprinkler Head Type:</i>	SPKLR-06 Concealed Recessed Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<i>Fire Special Requirements:</i>		<b>Chapter 14</b>
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless			
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded			
<i>Door Lockset Group:</i>	B Mortise Lever Lockset w/ Thumb Turn - Entrance Function			
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master			
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer			
<i>Interior Window:</i>	N/A			
<i>Exterior Windows:</i>	N/A			
<i>Exterior Window / Door Glazing:</i>				
<i>Special Requirements:</i>	Alt door: A-A Wood, Full Flush			
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
<i>Acoustic Separation:</i>	STC 50: Moderate sound isolation. Very loud sounds can be faintly heard	<i>Fixtures and Fittings 1:</i>	N/A	
<i>Floor Finish:</i>	FF-04 VCT	<i>Fixtures and Fittings 2:</i>		
<i>Base:</i>	BF-01 Rubber Base	<i>Fixtures and Fittings 3:</i>		
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Fixtures and Fittings 4:</i>		
<i>Wall Finish:</i>	WF-02: Gypsum Board, 5/8" High Impact, Painted	<i>Fixtures and Fittings 5:</i>		
<i>Ceiling Const. / Finish:</i>	CF-03: Acoustic Ceiling Tile, Suspended	<i>Fixtures and Fittings 6:</i>		
<i>Ceiling Remark:</i>		<i>Fixtures and Fittings 7:</i>		
<i>Ceiling Height:</i>	9'-0"	<i>Plumbing Special</i>	None	
<i>Alternate Construction:</i>				
<i>Const Special Requirements:</i>	Mini-blinds at windows.			
<b>DIV 10 - FIXED EQUIPMENT</b>		<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<i>Fixed Equipment 1:</i>	Dry Erase Marker Board, White, 60" W x 36" H	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Fixed Equipment 2:</i>	Wall mount for video monitor(s)	<i>Return Register:</i>	RR-2: Return Grille	
<i>Fixed Equipment 3:</i>		<i>Temp Summer</i>	75° (max)	
		<i>Temp Winter</i>	72° (min)	
		<i>Temp Control:</i>	T-1: Flush Mounted Wall Temperature Sensor	
		<i>Humidity Range:</i>	30% to 60%	
		<i>Special Security:</i>		
		<i>Mech Special Requirements:</i>	S- 1, 4, RR- 1 registers are options.	
<b>DIV 26 - ELECTRICAL</b>		<b>DIV 26 - LIGHTING</b>		<b>Chapter 19</b>
<i>Receptacles:</i>		<i>Lighting Fixture:</i>	L-1B: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 94+ CRI Lamp	
<i>Other Electrical Receptacles:</i>		<i>Fixture Types Optional/Special:</i>	L-7: Lighting Fixture, Recessed 6" Downlight	
<i>Electrical Special</i>		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	Provide 30 FC at working surface. LC-2 Dimmers for lighting.	



<b>DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14</b>	
<i>Furnishings and Equipment 1:</i>	Collapsible easel, Computer(s), Conference Phone, Conference Table and Chairs
<i>Furnishings and Equipment 2:</i>	Ceiling-mounted video projector, screen, associated wiring & power, Video Monitor(s)
<i>Furnishings and Equipment 3:</i>	Conference Table and Chairs, Credenza, Portable AV and/ or Video Conferencing equipment.
<b>OTHER REQUIREMENTS</b>	
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.	

<b>DIV 27 - COMMUNICATIONS Chapter 20</b>	
<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Communications Special</i>	Provide additional phone, data and AV at floor outlet centered on conference table.
<b>DIV 28 - SECURITY Chapter 21</b>	
<i>CCTV Camera:</i>	N/A
<i>IDS:</i>	N/A
<i>Access Control:</i>	N/A
<i>Duress System</i>	N/A
<i>Security Special Requirements:</i>	

**SCHEMATIC PLAN Conference Room - Muster / Training CRG-02-10**



**Conference Room - Muster/Training**

CRG-02-10

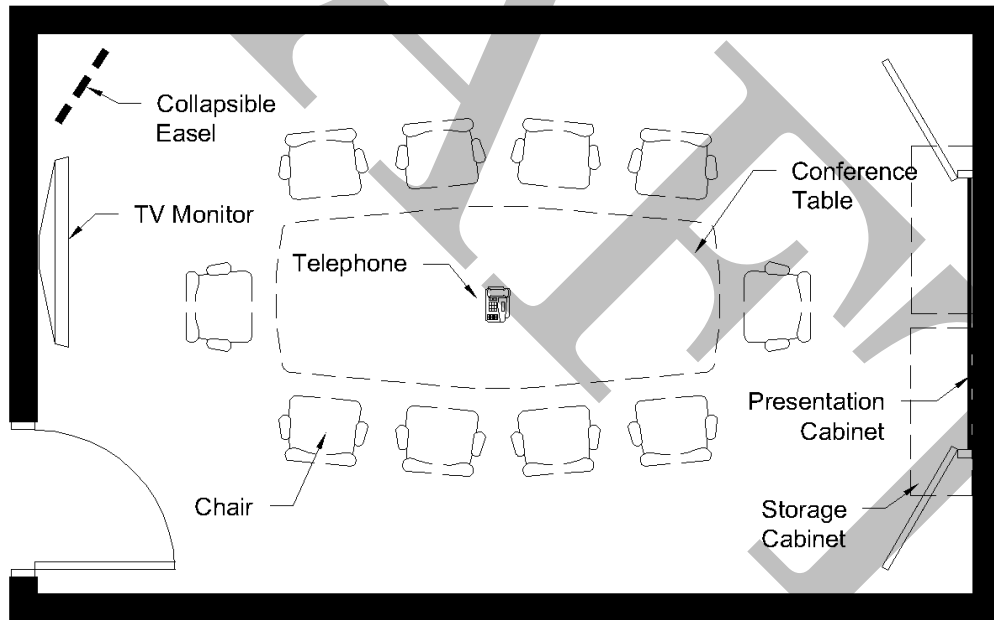
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<b>ROOM FUNCTION</b> Conference Room - Small		<b>Room Code:</b> CRG-02-11	<b>1.4 CONFERENCE AND TRAINING SPACES</b>	
<b>ROOM SIGN</b> Conference		5/18/2018 1:56 PM		
This conference room is used to conduct meetings. The space requires audio and video capability.				
<input type="checkbox"/> Cargo				
<b>ROOM SIZE: ROOM OCCUPANCY</b>			<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>	
<b>260 SF</b>	<b>8 to 10 occupants</b>		<i>Sprinkler Head Type:</i>	SPKLR-06 Concealed Recessed Pendant
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>			<i>Fire Special Requirements:</i>	None
<i>Door Type:</i>	A-A Wood, Full flush, 36" wide x 7'-0" high x 1-3/4" thick, Solid core, 5 layers		<b>DIV 22 - PLUMBING Chapter 17</b>	
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded		<i>Fixtures and Fittings 1:</i>	N/A
<i>Door Lockset Group:</i>	A Mortise Lever Lockset - Classroom Function		<i>Fixtures and Fittings 2:</i>	
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master		<i>Fixtures and Fittings 3:</i>	
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer		<i>Fixtures and Fittings 4:</i>	
<i>Interior Window:</i>	Hollow Metal Frame, Painted, 1/4" tempered glazing		<i>Fixtures and Fittings 5:</i>	
<i>Exterior Windows:</i>	Aluminum Framed Windows, Steel reinforced		<i>Fixtures and Fittings 6:</i>	
<i>Exterior Window / Door Glazing:</i>	GL-01 Low-E Insulating Glazing, clear		<i>Fixtures and Fittings 7:</i>	
<i>Special Requirements:</i>	Alt door: B-B Hollow Metal, sidelight adjacent to door.		<i>Plumbing Special</i>	None
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>			<b>DIV 23 - MECHANICAL Chapter 18</b>	
<i>Acoustic Separation:</i>	STC 50: Moderate sound isolation. Very loud sounds can be faintly heard		<i>Supply Register:</i>	S-2: Square Ceiling Diffuser
<i>Floor Finish:</i>	FF-09 Carpet Tile		<i>Return Register:</i>	RR-2: Return Grille
<i>Base:</i>	BF-01 Rubber Base		<i>Temp Summer</i>	75° (max)
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation		<i>Temp Winter</i>	72° (min)
<i>Wall Finish:</i>	WF-01: Gypsum Board, 5/8" Regular, Painted		<i>Temp Control:</i>	T-1: Flush Mounted Wall Temperature Sensor
<i>Ceiling Const. / Finish:</i>	CF-03: Acoustic Ceiling Tile, Suspended		<i>Humidity Range:</i>	30% to 60%
<i>Ceiling Remark:</i>			<i>Special Security:</i>	
<i>Ceiling Height:</i>	9'-0"		<i>Mech Special Requirements:</i>	S- 1, 4, RR- 1 registers are options.
<i>Alternate Construction:</i>	5/8" Gypsum Ceiling, Painted		<b>DIV 26 - ELECTRICAL Chapter 19</b>	
<i>Const Special Requirements:</i>	Mini-blinds at windows.		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>			<i>Other Electrical Receptacles:</i>	Receptacle, Dedicated UPS-fed, Receptacle, Recessed Power / Data Floor Box, 2 duplex minimum
<i>Fixed Equipment 1:</i>	Wall mount for video monitor(s), Work Counter, Cabinets below		<i>Electrical Special</i>	Recessed flush floor outlet centered on conference table, 8 outlets.
<i>Fixed Equipment 2:</i>			<b>DIV 26 - LIGHTING Chapter 19</b>	
<i>Fixed Equipment 3:</i>			<i>Lighting Fixture:</i>	L-1B: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 94+ CRI Lamp
			<i>Fixture Types Optional/Special:</i>	L-7: Lighting Fixture, Recessed 6" Downlight
			<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor
			<i>Lighting Special</i>	Provide 40 FC at working surface. LC-2 Dimmer for incandescent lighting.



<b>DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14</b>		<b>DIV 27 - COMMUNICATIONS Chapter 20</b>	
<i>Furnishings and Equipment 1:</i>	Conference Phone, Conference Table and Chairs, Video Teleconference Equipment	<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Furnishings and Equipment 2:</i>	Video Monitor, Wall-mount bracket to accommodate 42" (min) TV screen	<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Furnishings and Equipment 3:</i>	Credenza, Wall-mount presentation cabinet with 60"x 36" white dry erase marker board	<i>Communications Special</i>	Provide phone and data at floor outlet centered on conference table.
<b>OTHER REQUIREMENTS</b>		<b>DIV 28 - SECURITY Chapter 21</b>	
Provide television outlet with service package that includes local media and national news networks, located at monitor mounting bracket.		<i>CCTV Camera:</i>	N/A
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.		<i>IDS:</i>	N/A
		<i>Access Control:</i>	N/A
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	
<b>SCHEMATIC PLAN</b>		<b>Conference Room - Small</b>	
		<b>CRG-02-11</b>	



**Conference Room - Small**  
CRG-02-11

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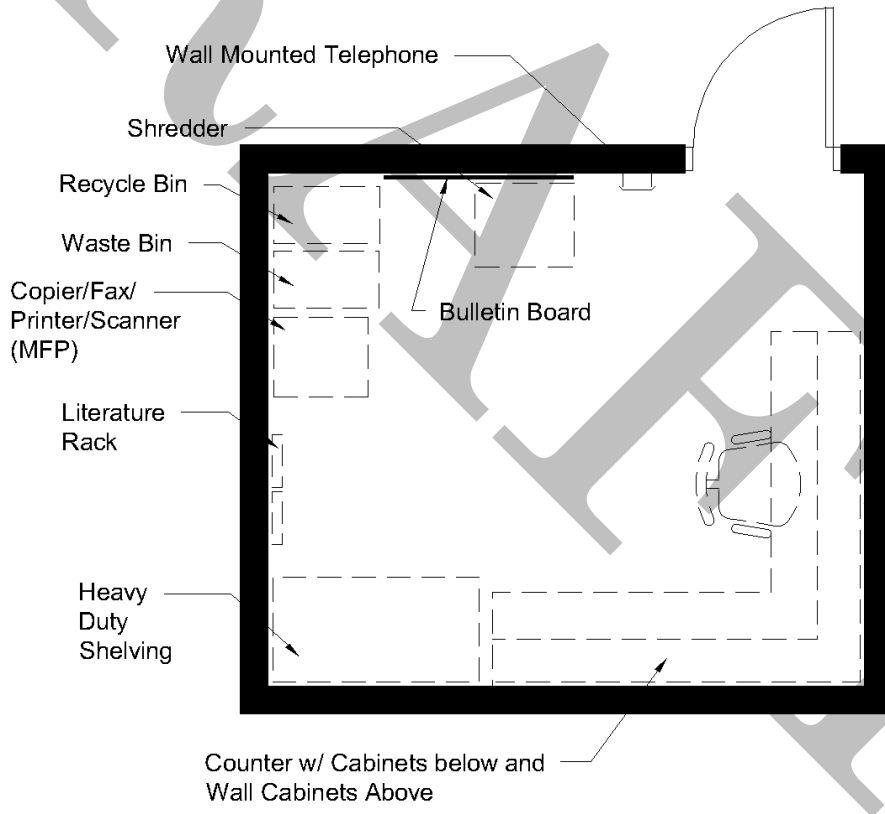
**U.S. Customs and Border Protection**

<b>ROOM FUNCTION</b> Document Handling Room		<b>Room Code:</b> CRG-02-12	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Document Handling Room		5/18/2018 1:57 PM		
<p>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 work area alcove area. One document handling room is required.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
100 SF (min)	N/A	<i>Sprinkler Head Type:</i>	SPKLR-08 Semi-Recessed Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<i>Fire Special Requirements:</i>		<b>Chapter 14</b>
<i>Door Type:</i>	A-A Wood, Full flush, 36" wide x 7'-0" high x 1-3/4" thick, Solid core, 5 layers			
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
<i>Door Lockset Group:</i>	B Mortise Lever Lockset w/ Thumb Turn - Entrance Function	<i>Fixtures and Fittings 1:</i>	N/A	
<i>Door Hardware Cylinder:</i>	A-2: Cylinder, keyed individually NOT under a CBP Master	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Group:</i>	B Automatic Door Bottom, D Door Stop, E Door Threshold, K Automatic Door Closer	<i>Fixtures and Fittings 3:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 4:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Special Requirements:</i>	Alt door: B-B Hollow Metal. J - Non-removable hinges if out-swing door.	<i>Fixtures and Fittings 7:</i>		
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<i>Plumbing Special</i>		<b>Chapter 18</b>
<i>Acoustic Separation:</i>	No Special Acoustical Requirement			
<i>Floor Finish:</i>	FF-04 VCT	<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<i>Base:</i>	BF-01 Rubber Base	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Return Register:</i>	RR-2: Return Grille	
<i>Wall Finish:</i>	WF-01: Gypsum Board, 5/8" Regular, Painted	<i>Temp Summer:</i>	75° (max)	
<i>Ceiling Const. / Finish:</i>	CF-03: Acoustic Ceiling Tile, Suspended	<i>Temp Winter:</i>	72° (min)	
<i>Ceiling Remark:</i>		<i>Temp Control:</i>	T-1: Flush Mounted Wall Temperature Sensor	
<i>Ceiling Height:</i>	9'-0"	<i>Humidity Range:</i>	30% to 60%	
<i>Alternate Construction:</i>	Ceiling: 5/8" Gypsum, Painted. Floor: match adjacent if space is within another area.	<i>Special Security:</i>		
<i>Const Special Requirements:</i>		<i>Mech Special Requirements:</i>	S-1, S-4, RR-1 registers are options.	
<b>DIV 10 - FIXED EQUIPMENT</b>		<b>DIV 26 - ELECTRICAL</b>		<b>Chapter 19</b>
<i>Fixed Equipment 1:</i>	Wall Cabinets, Work Counter, Cabinets below	<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<i>Fixed Equipment 2:</i>		<i>Other Electrical Receptacles:</i>	Receptacle, Dedicated for Copier, verify type and voltage	
<i>Fixed Equipment 3:</i>	Counters and cabinets shall be plastic laminate, specified for high durability.	<i>Electrical Special</i>	Additional R-1 receptacles above counters, 36" OC.	
		<b>DIV 26 - LIGHTING</b>		<b>Chapter 19</b>
		<i>Lighting Fixture:</i>	L-1A: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 85+ CRI Lamp	
		<i>Fixture Types Optional/Special:</i>	N/A	
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	Provide 40 FC at working surface.	





DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Copier, Facsimile, File Cabinet, Standard, High Capacity Shredder	<i>Phone Outlets:</i>	Phone 06 RJ-45 phone port, 1 per wall minimum
<i>Furnishings and Equipment 2:</i>	Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H	<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Furnishings and Equipment 3:</i>	Recycle Bin, Telephone, Waste Bin	<i>Communications Special</i>	Phone outlet at 5' AFF.
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
Cabinets shall be sized to store general office supplies, including copy paper, ink toner cartridges, stationary, and binding supplies.		<i>CCTV Camera:</i>	N/A
		<i>IDS:</i>	N/A
		<i>Access Control:</i>	N/A
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		Document Handling Room	
		CRG-02-12	



Document Handling Tool

CRG-02-12

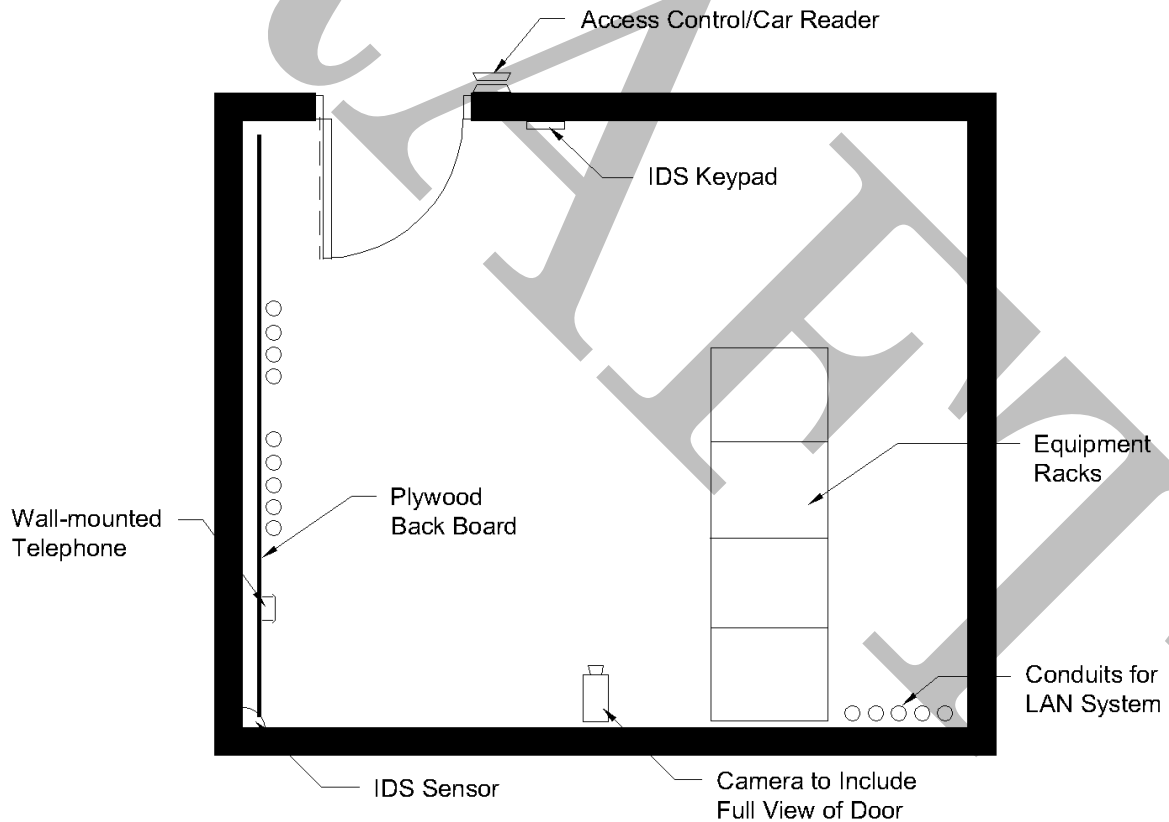
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<b>ROOM FUNCTION</b> Local Area Network (LAN) Room		<b>Room Code:</b> CRG-02-13	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Support		6/22/2018 3:44 PM		
<p>The LAN room is a secure space that accommodates all CBP secure LAN equipment &amp; all facility system equipment connected to CBP secure LAN. The LAN room combines the voice, data &amp; 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 &amp; 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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
180 SF (min)	N/A	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>	Dry System	
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	FD-1: Floor Drains - Finished Area	
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>	A-2: Cylinder, keyed individually NOT under a CBP Master	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>	D Door Stop, G BMAS-UL 634 Level 2, J Non-Removable Hinges (outswing)	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>		<i>Plumbing Special</i>	Make-up water line to HVAC equipment. Condensate drain line with pump for HVAC equip.	
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-17 Anti-static VCT	<i>Return Register:</i>	RR-2: Return Grille	
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Summer</i>	64° to 80°	
<i>Wall Construction:</i>	Wall-19 3/4" FRT painted plywood over #9 (10Ga) Expanded Metal Mesh on metal studs	<i>Temp Winter</i>	64° to 80°	
<i>Wall Finish:</i>	WF-16: 3/4" FRT Plywood on furring channels, Painted. At walls noted on plan.	<i>Temp Control:</i>	Room: Dedicated Room Temperature control	
<i>Ceiling Const. / Finish:</i>	CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted	<i>Humidity Range:</i>	40% to 60%	
<i>Ceiling Remark:</i>	Exposed structure acceptable.	<i>Special Security:</i>	N/A	
<i>Ceiling Height:</i>	9' min clear below all ceiling mounted equipment/infrastructure and drop ceiling.	<i>Mech Special Requirements:</i>	One Dedicated, wall-mounted, computer rm type A/C unit with microprocessor control. Provide 400 CFM min conditioned air from base HVAC as backup	
<i>Alternate Construction:</i>		<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Const Special Requirements:</i>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 1:</i>	Four post equipment racks (by Government and installed by contractor). 3' clear front/back	<i>Electrical Special</i>	Dedicated receptacle for telephone and computer equipment. See Other Requirements, Electrical	
<i>Fixed Equipment 2:</i>	Two post equipment racks (provided and installed by cabling contractor).	<b>DIV 26 - LIGHTING Chapter 19</b>		
<i>Fixed Equipment 3:</i>	3/4" x 4' x 8' plywood backboard installed horizontally 2' to 3' AFF, one full wall (min)	<i>Lighting Fixture:</i>	L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens	
		<i>Fixture Types Optional/Special:</i>	L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens	
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	Provide 30 FC at floor level	



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Lockable Equipment Cabinet(s)	<i>Phone Outlets:</i>	Phone 04 4 - Double RJ-45 phone port, each side of backboard
<i>Furnishings and Equipment 2:</i>	Rack-mounted NVRs, Telephone	<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	2 post cabling: ceiling via rigid conduit. 4 post cabling: via flex conduit. TACCOM Equipment
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
<p>Electrical: Provide 1/4" 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.</p>		<i>CCTV Camera:</i>	Fixed CCTV wide-angle lens camera, monitored at CCC.
		<i>IDS:</i>	IDS & Alarm, UPS, Keypad control inside, adjacent to door, motion detectors, HSS-2
		<i>Access Control:</i>	Two factor, APL-listed card reader
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	Tamper resistant enclosures for equipment. Camera must be positioned within room.
SCHEMATIC PLAN		Local Area Network (LAN) Room	
		CRG-02-13	



Local Area Network (LAN) Room

CRG-02-13

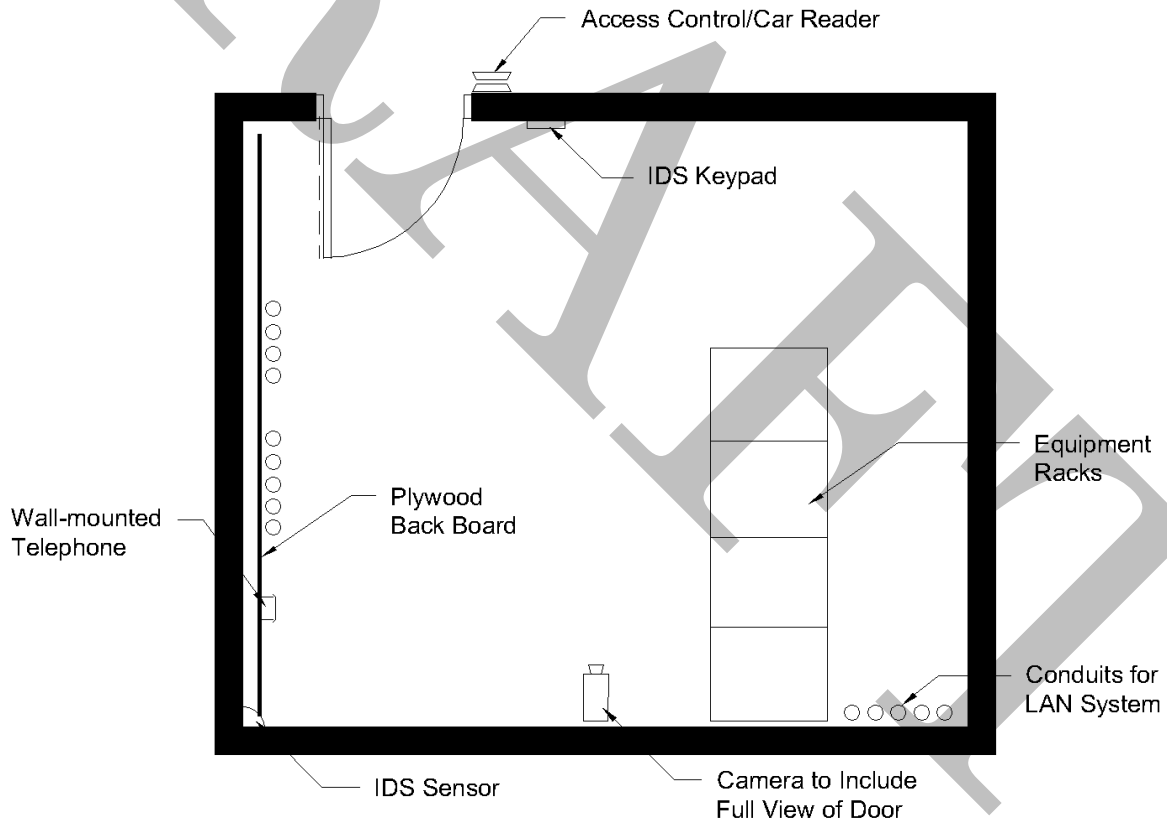
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<b>ROOM FUNCTION</b> <b>Supplemental LAN (SLAN) Room</b>		<b>Room Code:</b> <b>CRG-02-14</b>	<b>2.0 OPERATIONAL SUPPORT SPACES</b>
<b>ROOM SIGN</b> <b>Support</b>		6/22/2018 3:44 PM	
<p>A SLAN may contain network and system equipment such as head-end 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.</p> <p>This room will be constructed in compliance with the current CBP SPPH standards relating to the construction of a strong room.</p>			<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>	
<b>120 SF (min)</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>	Dry System
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>	
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	FD-1: Floor Drains - Finished Area
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<i>Fixtures and Fittings 2:</i>	
<i>Door Hardware Cylinder:</i>	A-2: Cylinder, keyed individually NOT under a CBP Master	<i>Fixtures and Fittings 3:</i>	
<i>Door Hardware Group:</i>	D Door Stop, G BMAS-UL 634 Level 2, J Non-Removable Hinges (outswing), K Automatic Door	<i>Fixtures and Fittings 4:</i>	
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>	
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>	
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>	
<i>Special Requirements:</i>		<i>Plumbing Special</i>	Make-up water line to HVAC equipment. Condensate drain line with pump for HVAC equip.
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>	
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser
<i>Floor Finish:</i>	FF-17 Anti-static VCT	<i>Return Register:</i>	RR-2: Return Grille
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Summer</i>	64° to 80°
<i>Wall Construction:</i>	Wall-19 3/4" FRT painted plywood over #9 (10Ga) Expanded Metal Mesh on metal studs	<i>Temp Winter</i>	64° to 80°
<i>Wall Finish:</i>	WF-16: 3/4" FRT Plywood on furring channels, Painted. At walls noted on plan.	<i>Temp Control:</i>	Room: Dedicated Room Temperature control
<i>Ceiling Const. / Finish:</i>	CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted	<i>Humidity Range:</i>	40% to 60%
<i>Ceiling Remark:</i>	Exposed structure acceptable.	<i>Special Security:</i>	N/A
<i>Ceiling Height:</i>	9' min clear below all ceiling mounted equipment/infrastructure and drop ceiling.	<i>Mech Special Requirements:</i>	One Dedicated, wall-mounted, computer rm type A/C unit with microprocessor control. Provide 400 CFM min conditioned air from base HVAC as backup
<i>Alternate Construction:</i>		<b>DIV 26 - ELECTRICAL Chapter 19</b>	
<i>Const Special Requirements:</i>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>	
<i>Fixed Equipment 1:</i>	Four post equipment racks (by Government and installed by contractor). 3' clear front/back	<i>Electrical Special</i>	Dedicated receptacle for telephone and computer equipment. See Other Requirements, Electrical
<i>Fixed Equipment 2:</i>	Two post equipment racks (provided and installed by cabling contractor).	<b>DIV 26 - LIGHTING Chapter 19</b>	
<i>Fixed Equipment 3:</i>	3/4" x 4' x 8' plywood backboard installed horizontally 2' to 3' AFF, one full wall (min)	<i>Lighting Fixture:</i>	L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens
		<i>Fixture Types Optional/Special:</i>	L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor
		<i>Lighting Special</i>	Provide 30 FC at floor level



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Lockable Equipment Cabinet(s), Rack-mounted NVRs	<i>Phone Outlets:</i>	Phone 04 4 - Double RJ-45 phone port, each side of backboard
<i>Furnishings and Equipment 2:</i>	Telephone	<i>Data Outlets:</i>	Data 05: Data port, 1 per wall minimum
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	2 post cabling: ceiling via rigid conduit 4 post cabling: via flexible conduit
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
Electrical: Provide 1/4" 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.		<i>CCTV Camera:</i>	Fixed CCTV wide-angle lens camera, monitored at CCC.
		<i>IDS:</i>	IDS & Alarm, UPS, Keypad control inside, adjacent to door, motion detectors, HSS-2
		<i>Access Control:</i>	Two factor, APL-listed card reader
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	Tamper resistant enclosures for equipment. Camera must be positioned within room.
SCHEMATIC PLAN		Supplemental LAN (SLAN) Room	
		CRG-02-14	



Supplemental Local Area Network (SLAN) Room

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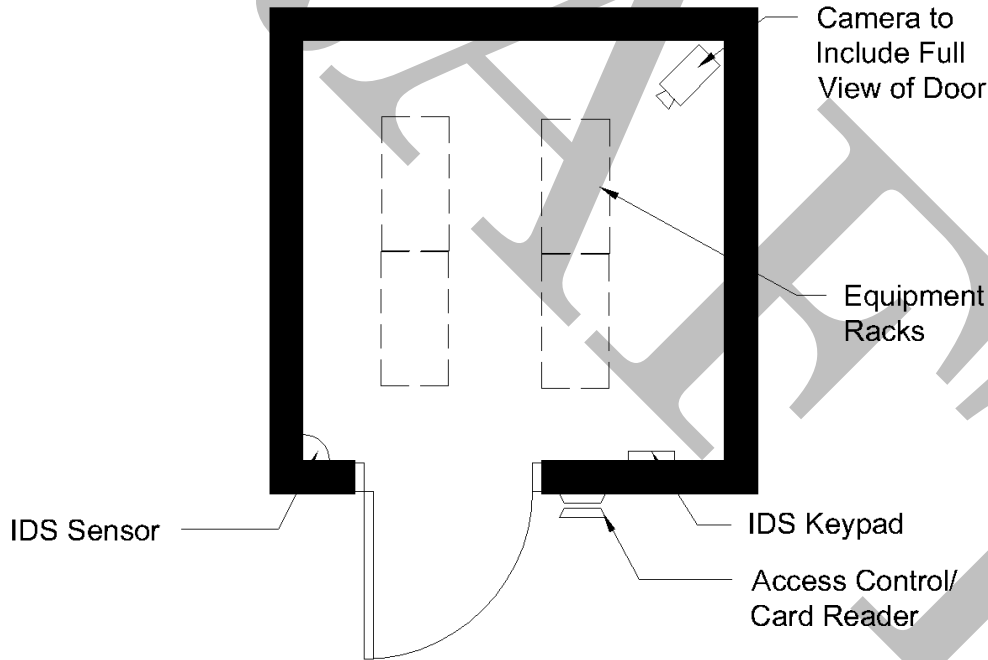
CRG-02-14



<b>ROOM FUNCTION</b> Intermediate Distribution Frame (IDF)		<b>Room Code:</b> CRG-02-15	<b>2.0 OPERATIONAL SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Support		6/22/2018 3:44 PM		
<p>The Intermediate Distribution Frame (IDF) separate from the LAN, is required at all ports where cable runs from the LAN exceed 300'. Where long distances exist between LAN and workstation terminals, data processing and retrieval is less reliable. 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.</p>				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
80 SF (min)	N/A	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<i>Fire Special Requirements:</i>		
<b>Chapter 14</b>		<b>DIV 22 - PLUMBING</b>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>Chapter 17</b>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	NA	
<i>Door Lockset Group:</i>	D High Security Mortise Lever Lockset w/ Deadbolt - Storeroom Function	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>	D Door Stop, J Non-Removable Hinges (outswing), K Automatic Door Closer	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>		<i>Plumbing Special</i>		
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<b>Chapter 14</b>		<i>Supply Register:</i>	S-3: Supply Grille	
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Return Register:</i>	RR-2: Return Grille	
<i>Floor Finish:</i>	FF-05 VCT, Dissipative	<i>Temp Summer</i>	64° to 80°	
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Winter</i>	64° to 80°	
<i>Wall Construction:</i>	Wall-05 Gyp Bd 2x panels w/#9(10 Ga) Expanded Metal Mesh on Metal Stud, Sound Insulation	<i>Temp Control:</i>	Either: Room or Zone Temperature control	
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss	<i>Humidity Range:</i>	40% to 60%	
<i>Ceiling Const. / Finish:</i>	CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted	<i>Special Security:</i>	N/A	
<i>Ceiling Remark:</i>		<i>Mech Special Requirements:</i>		
<i>Ceiling Height:</i>	9' min	<b>DIV 26 - ELECTRICAL</b>		
<i>Alternate Construction:</i>	Floor: FF-16 Raised Floor with Anti-static VCT Walls: 8" CMU	<b>Chapter 19</b>		
<i>Const Special Requirements:</i>	Installation of expanded wire mesh must be inspected by CBP prior to covering.	<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>DIV 10 - FIXED EQUIPMENT</b>		<i>Other Electrical Receptacles:</i>		
<b>Chapter 14</b>		<i>Electrical Special</i>		
<i>Fixed Equipment 1:</i>	N/A	See Other Requirements below.		
<i>Fixed Equipment 2:</i>		<b>DIV 26 - LIGHTING</b>		
<i>Fixed Equipment 3:</i>		<b>Chapter 19</b>		
		<i>Lighting Fixture:</i>	L-9: Lighting Fixture, Pendent Mounted Industrial Protected	
		<i>Fixture Types Optional/Special:</i>	L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens	
		<i>Lighting Control:</i>	LC-1: Light Switch	
		<i>Lighting Special</i>	Provide 30 FC at floor level.	



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Lockable Equipment Cabinet(s)	<i>Phone Outlets:</i>	Phone 03 Single RJ-45 phone port, Wall mounted
<i>Furnishings and Equipment 2:</i>		<i>Data Outlets:</i>	N/A
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
<p>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.</p> <p>Equipment: LAN and Security System hardware, equipment racks, PBX telephone.</p> <p>OIT will furnish a room layout and equipment specifications</p> <p>Provide all necessary cabling and conduit to support the equipment furnished and installed by the government.</p> <p>If required for equipment, provide 3/4" FRT Plywood panels, painted, similar to electrical room requirements.</p>		<i>CCTV Camera:</i>	Fixed CCTV wide-angle lens camera, monitored at CCC. Position to monitor door.
		<i>IDS:</i>	IDS & Alarm, UPS, Keypad control inside, adjacent to door, HSS-2
		<i>Access Control:</i>	Two factor, APL-listed card reader
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		Intermediate Distribution Frame (IDF)	
		CRG-02-15	



Intermediate Distribution Frame  
CRG-02-15

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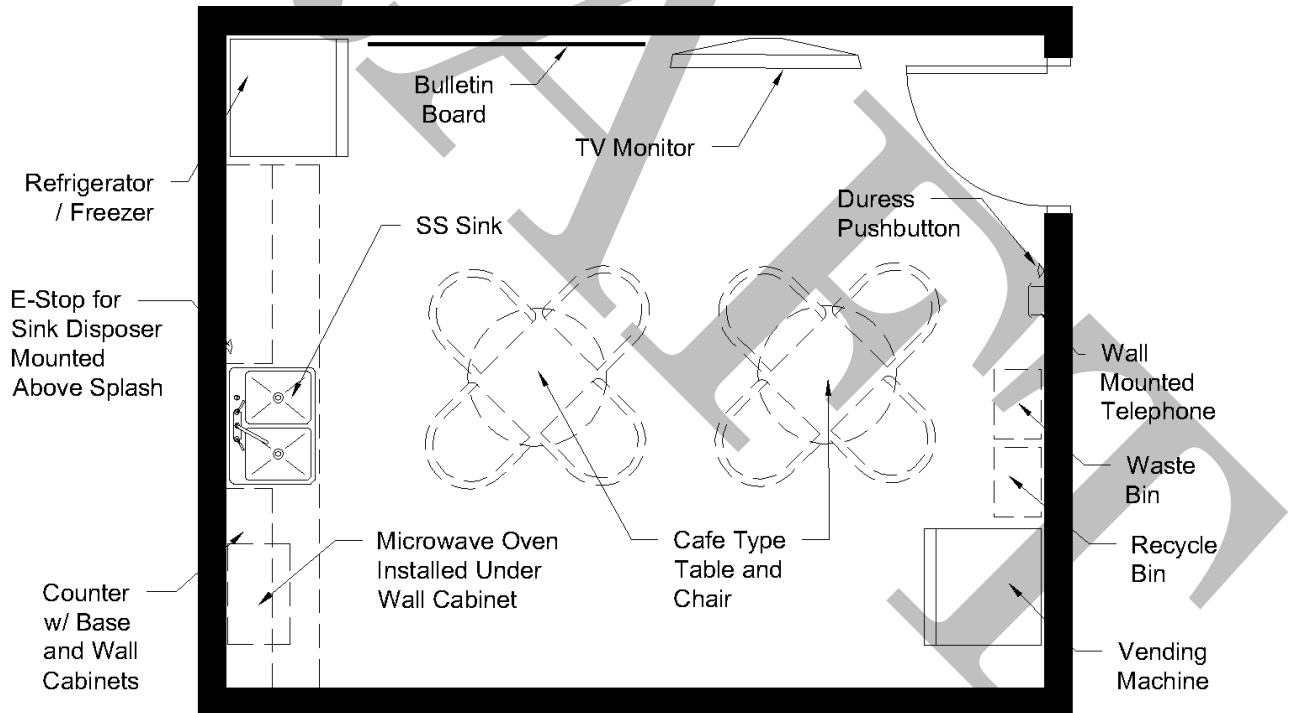
<b>ROOM FUNCTION</b> Staff Break Room		Room Code: <b>CRG-03-01</b>	<b>3.0 STAFF SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Break Room		10/30/2018 10:40 AM		
<p>The Staff Break Room provides CBP employees an area to prepare and consume meals and to take smaller breaks. This room shall include a refrigerator 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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
240 SF (min)	Varies	<i>Sprinkler Head Type:</i> SPKLR-08 Semi-Recessed Pendant		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	SK-2: Countertop Mount Sink - Two Handle Faucet	
<i>Door Lockset Group:</i>	A Mortise Lever Lockset - Classroom Function	<i>Fixtures and Fittings 2:</i>	FC-1 Two handle faucet, 8" centerset, Gooseneck spout, 1.5 GPM	
<i>Door Hardware Cylinder:</i>	A-3: Cylinder, keyed under a CBP Master, like Toilet and PT rooms	<i>Fixtures and Fittings 3:</i>	DSP-2: Disposer – Break Room Sink - 3/4 HP Commercial Grade	
<i>Door Hardware Group:</i>	D Door Stop, E Door Threshold, K Automatic Door Closer	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	Interior Aluminum Storefront, 1/4" tempered glazing	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>		<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>		<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>	Alt door: A-A wood, full flush	<i>Plumbing Special</i>	Provide cold water line with shut-off valve to refrigerator.	
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-04 VCT	<i>Return Register:</i>	RR-2: Return Grille	
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Summer</i>	75° (max)	
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Winter</i>	72° (min)	
<i>Wall Finish:</i>	WF-01: Gypsum Board, 5/8" Regular, Painted	<i>Temp Control:</i>	Room: Dedicated Room Temperature control	
<i>Ceiling Const. / Finish:</i>	CF-03: Acoustic Ceiling Tile, Suspended	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Remark:</i>		<i>Special Security:</i>		
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>		
<i>Alternate Construction:</i>	5/8" Gypsum Ceiling, Painted	<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Const Special Requirements:</i>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>	R-6A: Receptacle, Recessed Mounted GFCI, at counter 36" O.C.	
<i>Fixed Equipment 1:</i>	Wall mount for video monitor	<i>Electrical Special</i>	Dedicated receptacles for refrigerator, microwave, water cooler, and vending machine(s)	
<i>Fixed Equipment 2:</i>	Bulletin Board	<b>DIV 26 - LIGHTING Chapter 19</b>		
<i>Fixed Equipment 3:</i>		<i>Lighting Fixture:</i>	L-1: Lighting Fixture, Direct/Indirect, Recessed 2x2 or 2x4, 80+ CRI Lamp	
		<i>Fixture Types Optional/Special:</i>	L-14: Light Fixture, Decorative Surface Mounted or Pendant	
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	L-14 located at table(s). Provide 30 FC at floor level	





**U.S. Customs and Border Protection**

DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Café Tables and Chairs (verify quantity), Telephone, Video Monitor	<i>Phone Outlets:</i>	Phone 03 Single RJ-45 phone port, Wall mounted
<i>Furnishings and Equipment 2:</i>	Recycle Bin, Waste Bin	<i>Data Outlets:</i>	N/A
<i>Furnishings and Equipment 3:</i>	30" (min) Refrigerator/Freezer, Countertop Microwave, Water Cooler	<i>Communications Special</i>	Wall mounted junction box for cable television
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
<p>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.</p> <p>Provide Vending Machine(s).</p> <p>Where present, FWS, PHS and ICE share the break room. In this case provide access, which precludes transiting the CBP operational support area.</p> <p>Provide television outlet with service package that includes local media and national news networks.</p>		<i>CCTV Camera:</i>	N/A
		<i>IDS:</i>	N/A
		<i>Access Control:</i>	N/A
		<i>Duress System</i>	Mushroom Duress button, wall mounted
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		Staff Break Room	
		CRG-03-01	



**Staff Break Room**  
CRG-03-01

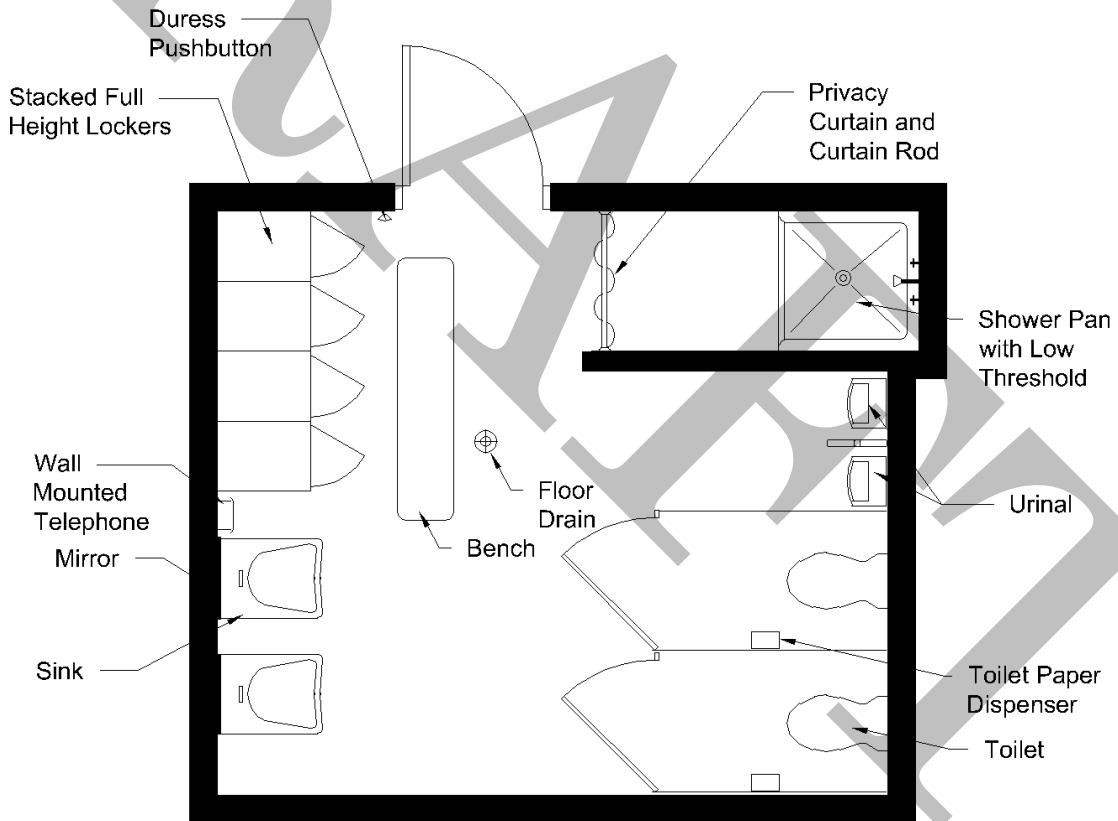
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<b>ROOM FUNCTION</b> Male Locker Room		<b>Room Code:</b> CRG-03-02	<b>3.0 STAFF SUPPORT SPACES</b>
<b>ROOM SIGN</b> Male Locker Room		10/30/2018 10:42 AM	
A male locker room shall be provided at each facility. The locker room shall include showers, 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.			<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>	
<b>Varies</b>	<b>Varies</b>	<i>Sprinkler Head Type:</i>	SPKLR-08 Semi-Recessed Pendant
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>	None
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>	
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	FD-1: Floor Drains - Finished Area
<i>Door Lockset Group:</i>	O Electrified Mortise Lock with built-in exit trim function & key override	<i>Fixtures and Fittings 2:</i>	SK-2: Countertop Mount Sink - Two Handle Faucet
<i>Door Hardware Cylinder:</i>	A-3: Cylinder, keyed alike under a CBP Master, like Toilet and PT rooms	<i>Fixtures and Fittings 3:</i>	WC-1: Floor Mounted Toilet - For Flush Valve
<i>Door Hardware Group:</i>	D Door Stop, K Automatic Door Closer, X Power Transfer Hinge	<i>Fixtures and Fittings 4:</i>	UR-1: Wall Hung Urinal - For Flush Valve
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>	SH-1 Shower Valve, Head and Handshower
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>	NA
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>	NA
<i>Special Requirements:</i>		<i>Plumbing Special</i>	
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>	
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<i>Supply Register:</i>	S-3: Supply Grille
<i>Floor Finish:</i>	FF-07 Ceramic Tile	<i>Return Register:</i>	RR-2: Return Grille
<i>Base:</i>	BF-02 Ceramic Tile Base	<i>Temp Summer</i>	75° (max)
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Winter</i>	72° (min)
<i>Wall Finish:</i>	WF-08: Ceramic Tile, Partial height	<i>Temp Control:</i>	
<i>Ceiling Const. / Finish:</i>	CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted	<i>Humidity Range:</i>	
<i>Ceiling Remark:</i>	Suspended acoustic tile not permitted.	<i>Special Security:</i>	
<i>Ceiling Height:</i>	9'-0"	<i>Mech Special Requirements:</i>	Room at negative pressure, 100 % Exhaust, 10 Air changes per hour minimum.
<i>Alternate Construction:</i>		<b>DIV 26 - ELECTRICAL Chapter 19</b>	
<i>Const Special Requirements:</i>	5/8" Moisture Resistant Gyp BD at walls. Tile wainscot to 56" H (min), with epoxy grout.	<i>Receptacles:</i>	R-6: Receptacle, Standard GFCI
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>	
<i>Fixed Equipment 1:</i>	Bench Seating secured to floor	<i>Electrical Special</i>	Minimum of (2) receptacles
<i>Fixed Equipment 2:</i>		<b>DIV 26 - LIGHTING Chapter 19</b>	
<i>Fixed Equipment 3:</i>	(1) bench min. in front of lockers	<i>Lighting Fixture:</i>	L-8: Lighting Fixture, Recessed Mounted Lensed Down Light
		<i>Fixture Types Optional/Special:</i>	
		<i>Lighting Control:</i>	LC-1: Light Switch, LC-3: Occupancy Sensor
		<i>Lighting Special</i>	Provide 30 FC at floor level



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
Furnishings and Equipment 1:	Telephone	Phone Outlets:	Phone 03 Single RJ-45 phone port, Wall mounted
Furnishings and Equipment 2:		Data Outlets:	N/A
Furnishings and Equipment 3:		Communications Special	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
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		CCTV Camera:	N/A
		IDS:	N/A
		Access Control:	N/A
		Duress System	Mushroom Duress button, wall mounted
		Security Special Requirements:	
SCHEMATIC PLAN		Male Locker Room	
		CRG-03-02	



**Male Locker Room**  
CRG-03-02

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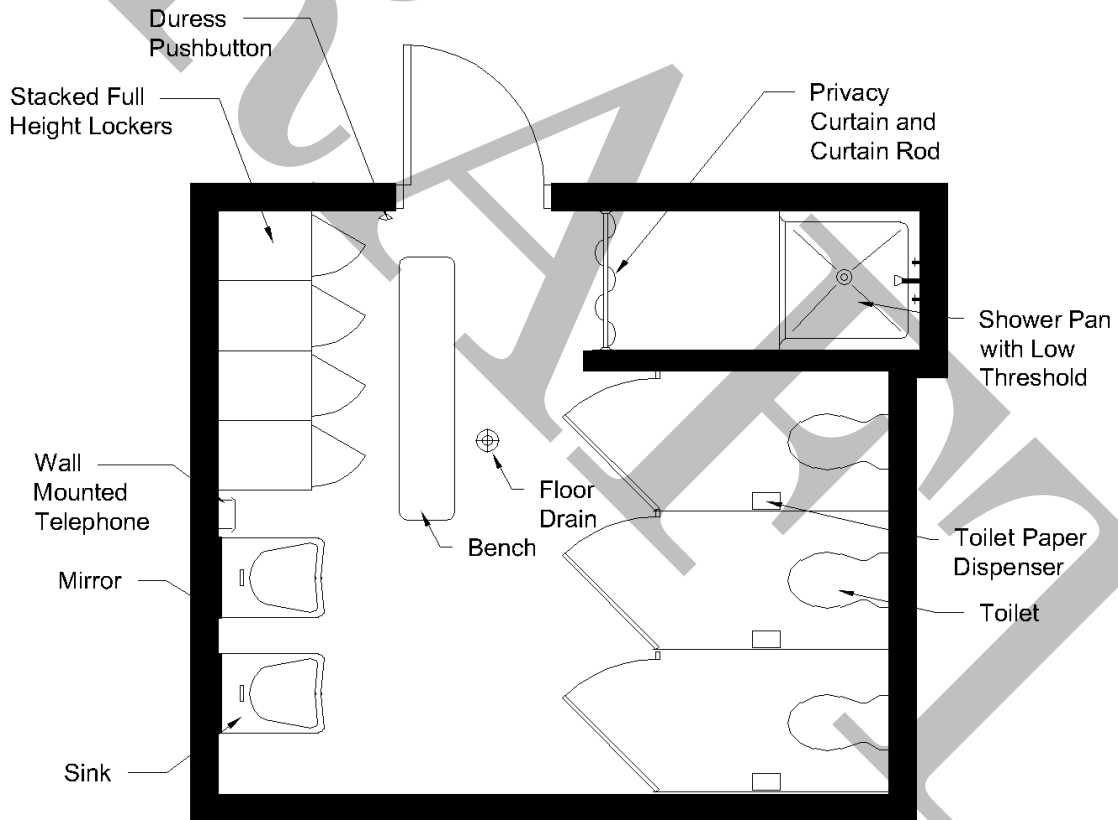
<b>ROOM FUNCTION</b> Female Locker Room		<b>Room Code:</b> CRG-03-03	<b>3.0 STAFF SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Female Locker Room		10/30/2018 10:43 AM		
A female locker room shall be provided at each facility. The locker room shall include showers, lockers and toilets. Lockers- 14 SF per locker/ Shower - number of showers and plumbing fixtures per IPC code and number of officers				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
<b>Varies</b>	<b>Varies</b>	<b>Sprinkler Head Type:</b> SPKLR-08 Semi-Recessed Pendant <b>Fire Special Requirements:</b> None		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<b>DIV 22 - PLUMBING Chapter 17</b>		
<b>Door Type:</b>	B-B-01 Hollow Metal, Full flush, seamless	<b>Fixtures and Fittings 1:</b> FD-1: Floor Drains - Finished Area <b>Fixtures and Fittings 2:</b> SK-2: Countertop Mount Sink - Two Handle Faucet <b>Fixtures and Fittings 3:</b> WC-1: Floor Mounted Toilet - For Flush Valve <b>Fixtures and Fittings 4:</b> SH-1 Shower Valve, Head and Handshower <b>Fixtures and Fittings 5:</b> NA <b>Fixtures and Fittings 6:</b> NA <b>Fixtures and Fittings 7:</b> NA <b>Plumbing Special</b>		
<b>Door Frame:</b>	HM-1 Interior, 12 gauge hollow metal, fully welded			
<b>Door Lockset Group:</b>	O Electrified Mortise Lock with built-in exit trim function & key override			
<b>Door Hardware Cylinder:</b>	A-3: Cylinder, keyed alike under a CBP Master, like Toilet and PT rooms			
<b>Door Hardware Group:</b>	D Door Stop, K Automatic Door Closer, X Power Transfer Hinge			
<b>Interior Window:</b>	N/A			
<b>Exterior Windows:</b>	N/A			
<b>Exterior Window / Door Glazing:</b>	N/A			
<b>Special Requirements:</b>				
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<b>Acoustic Separation:</b>	No Special Acoustical Requirement	<b>Supply Register:</b> S-3: Supply Grille <b>Return Register:</b> RR-2: Return Grille <b>Temp Summer:</b> 75° (max) <b>Temp Winter:</b> 72° (min) <b>Temp Control:</b> <b>Humidity Range:</b> <b>Special Security:</b>		
<b>Floor Finish:</b>	FF-07 Ceramic Tile			
<b>Base:</b>	BF-02 Ceramic Tile Base			
<b>Wall Construction:</b>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<b>Mech Special Requirements:</b> Room at negative pressure, 100 % Exhaust, 10 Air changes per hour minimum.		
<b>Wall Finish:</b>	WF-08: Ceramic Tile, Partial height			
<b>Ceiling Const. / Finish:</b>	CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted			
<b>Ceiling Remark:</b>	Suspended acoustic tile not permitted.			
<b>Ceiling Height:</b>	9'-0"			
<b>Alternate Construction:</b>				
<b>Const Special Requirements:</b>	5/8" Moisture Resistant Gyp BD at walls. Tile wainscot to 56" H (min), with epoxy grout.			
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<b>Fixed Equipment 1:</b>	Bench Seating secured to floor	<b>Receptacles:</b> R-6: Receptacle, Standard GFCI  <b>Other Electrical Receptacles:</b>  <b>Electrical Special</b> Minimum of (2) receptacles		
<b>Fixed Equipment 2:</b>				
<b>Fixed Equipment 3:</b>	(1) bench min. in front of lockers			
		<b>DIV 26 - LIGHTING Chapter 19</b>		
		<b>Lighting Fixture:</b> L-8: Lighting Fixture, Recessed Mounted Lensed Down Light  <b>Fixture Types Optional/Special:</b>  <b>Lighting Control:</b> LC-1: Light Switch, LC-3: Occupancy Sensor  <b>Lighting Special</b> Provide 30 FC at floor level		



DIV 10 - FURNISHINGS AND EQUIPMENT		Chapter 14
Furnishings and Equipment 1:	Telephone	
Furnishings and Equipment 2:		
Furnishings and Equipment 3:		
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		

DIV 27 - COMMUNICATIONS		Chapter 20
Phone Outlets:	Phone 03	Single RJ-45 phone port, Wall mounted
Data Outlets:	N/A	
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 Female Locker Room CRG-03-03**



**Female Locker Room**  
CRG-03-03

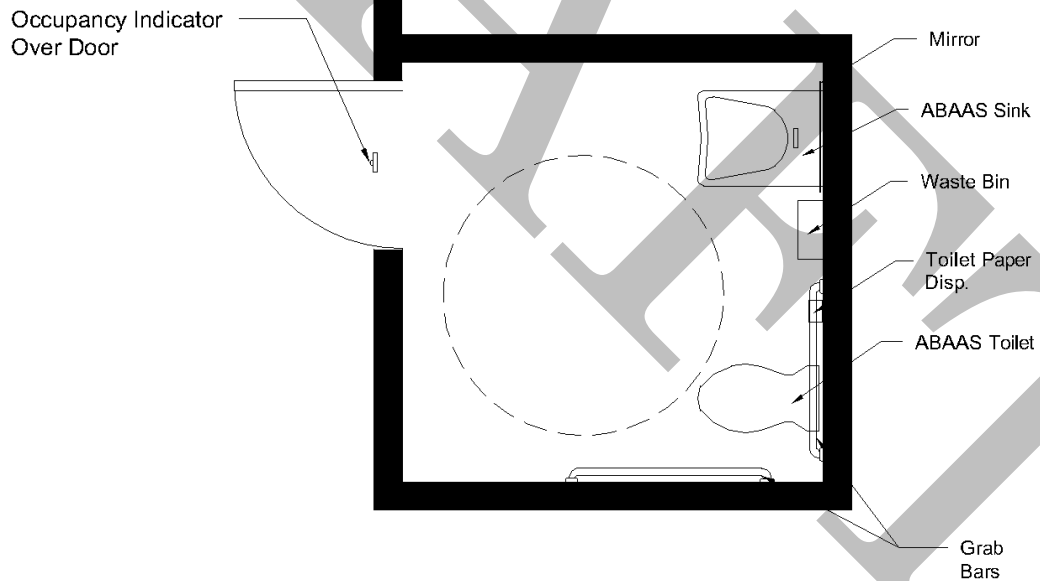
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ROOM FUNCTION <b>CBP Male and Female Restrooms</b>		Room Code: <b>CRG-03-04</b>	<b>3.0 STAFF SUPPORT SPACES</b>	
ROOM SIGN <b>CBP Male and Female Restrooms</b>		9/4/2018 9:24 AM		
Restrooms for male and female CBP staff shall be provided at each facility. Male and female staff restrooms shall be strategically placed throughout the facility for operational efficiency.			<input checked="" type="checkbox"/> Cargo	
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
<b>60 SF (min)</b>	<b>Varies</b>	<i>Sprinkler Head Type:</i> SPKLR-08 Semi-Recessed Pendant <i>Fire Special Requirements:</i> None		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<i>Fixtures and Fittings 1:</i> FD-1: Floor Drains - Finished Area <i>Fixtures and Fittings 2:</i> SK-2: Countertop Mount Sink - Two Handle Faucet <i>Fixtures and Fittings 3:</i> WC-1: Floor Mounted Toilet - For Flush Valve <i>Fixtures and Fittings 4:</i> UR-1: Wall Hung Urinal - For Flush Valve <i>Fixtures and Fittings 5:</i> NA <i>Fixtures and Fittings 6:</i> NA <i>Fixtures and Fittings 7:</i> NA <i>Plumbing Special</i> For male restrooms include urinals. For female restrooms utilize only floor mounted toilets		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded			
<i>Door Lockset Group:</i>	O Electrified Mortise Lock with built-in exit trim function & key override			
<i>Door Hardware Cylinder:</i>	A-3: Cylinder, keyed alike under a CBP Master, like Toilet and PT rooms			
<i>Door Hardware Group:</i>	D Door Stop, K Automatic Door Closer, X Power Transfer Hinge			
<i>Interior Window:</i>	N/A			
<i>Exterior Windows:</i>	N/A			
<i>Exterior Window / Door Glazing:</i>	N/A			
<i>Special Requirements:</i>				
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation	<i>Supply Register:</i> S-3: Supply Grille <i>Return Register:</i> RR-2: Return Grille <i>Temp Summer</i> 75° (max) <i>Temp Winter</i> 72° (min) <i>Temp Control:</i> <i>Humidity Range:</i> <i>Special Security:</i>		
<i>Floor Finish:</i>	FF-07 Ceramic Tile			
<i>Base:</i>	BF-02 Ceramic Tile Base			
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Mech Special Requirements:</i> Room at negative pressure, 100 % Exhaust, 10 Air changes minimum.		
<i>Wall Finish:</i>	WF-08: Ceramic Tile, Partial height			
<i>Ceiling Const. / Finish:</i>	CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted			
<i>Ceiling Remark:</i>	Suspended acoustic tile not permitted.			
<i>Ceiling Height:</i>	9'-0"			
<i>Alternate Construction:</i>				
<i>Const Special Requirements:</i>	5/8" Moisture Resistant Gyp BD at walls. Tile wainscot to 56" H (min), with epoxy grout.			
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Fixed Equipment 1:</i>	N/A	<i>Receptacles:</i> R-6: Receptacle, Standard GFCI <i>Other Electrical Receptacles:</i> <i>Electrical Special</i> Minimum of (2) receptacles		
<i>Fixed Equipment 2:</i>				
<i>Fixed Equipment 3:</i>				
		<b>DIV 26 - LIGHTING Chapter 19</b>		
		<i>Lighting Fixture:</i> L-8: Lighting Fixture, Recessed Mounted Lensed Down Light <i>Fixture Types Optional/Special:</i> <i>Lighting Control:</i> LC-1: Light Switch, LC-3: Occupancy Sensor <i>Lighting Special</i> Provide 30 FC at floor level		



DIV 10 - FURNISHINGS AND EQUIPMENT		Chapter 14	DIV 27 - COMMUNICATIONS		Chapter 20
Furnishings and Equipment 1:	N/A		Phone Outlets:	N/A	
Furnishings and Equipment 2:			Data Outlets:	N/A	
Furnishings and Equipment 3:			Communications Special		
OTHER REQUIREMENTS			DIV 28 - SECURITY		Chapter 21
			CCTV Camera:	N/A	
			IDS:	N/A	
			Access Control:	N/A	
			Duress System	N/A	
			Security Special Requirements:		
SCHEMATIC PLAN		CBP Male and Female Restrooms			CRG-03-04



**CBP Staff Restroom**  
CRG-03-04

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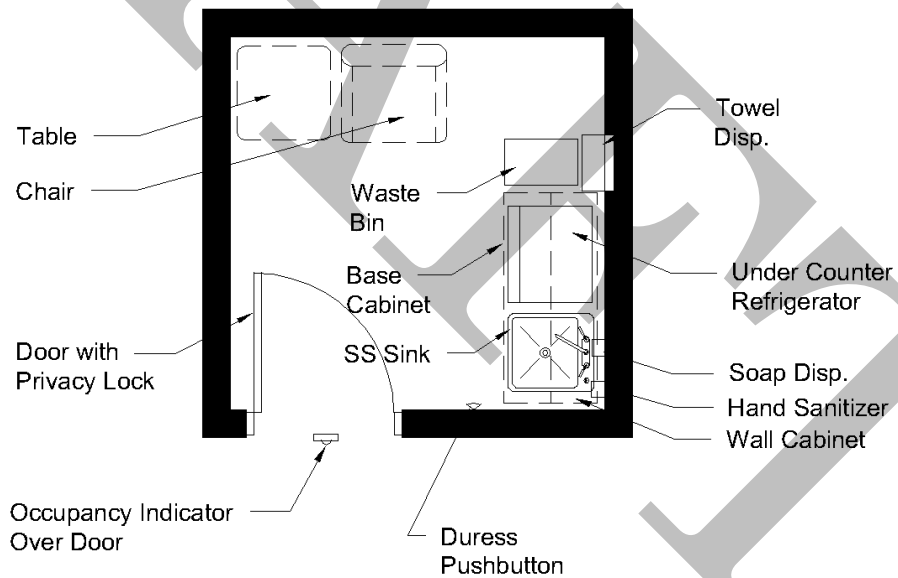


<b>ROOM FUNCTION</b> <b>Lactation Support Room</b>		<b>Room Code:</b> <b>CRG-03-05</b>	<b>3.0 STAFF SUPPORT SPACES</b>
<b>ROOM SIGN</b> <b>Mother's Room</b>		5/18/2018 1:58 PM	
<p>The Lactation Support Room is provided for CBP employees who are nursing mothers. It should be located in proximity to the 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.</p>			<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>	
<b>60 SF</b>	<b>1 Staff</b>	<i>Sprinkler Head Type:</i>	SPKLR-08 Semi-Recessed Pendant
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>	
<i>Door Type:</i>	A-A Wood, Full flush, Solid core, 5 layers	<b>DIV 22 - PLUMBING Chapter 17</b>	
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	SK-2: Countertop Mount Sink - Two Handle Faucet
<i>Door Lockset Group:</i>	B Mortise Lever Lockset w/ Thumb Turn - Entrance Function	<i>Fixtures and Fittings 2:</i>	FC-2 Battery Powered Faucet, 4" 0.5 GPM
<i>Door Hardware Cylinder:</i>	A-3: Cylinder, keyed under a CBP Master, like Toilet and PT rooms	<i>Fixtures and Fittings 3:</i>	
<i>Door Hardware Group:</i>	D Door Stop	<i>Fixtures and Fittings 4:</i>	
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>	
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>	
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>	
<i>Special Requirements:</i>	Exterior windows are optional.	<i>Plumbing Special</i>	
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>	
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser
<i>Floor Finish:</i>	FF-04 VCT	<i>Return Register:</i>	RR-2: Return Grille
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Summer</i>	75° (max)
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Winter</i>	72° (min)
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss	<i>Temp Control:</i>	Zone: Zone Temperature Control
<i>Ceiling Const. / Finish:</i>	CF-03: Acoustic Ceiling Tile, Suspended	<i>Humidity Range:</i>	30% to 60%
<i>Ceiling Remark:</i>		<i>Special Security:</i>	N/A
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>	
<i>Alternate Construction:</i>		<b>DIV 26 - ELECTRICAL Chapter 19</b>	
<i>Const Special Requirements:</i>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>	R-6A: Receptacle, Recessed Mounted GFCI, at counter 36" O.C.
<i>Fixed Equipment 1:</i>	Paper towel dispenser, Soap dispenser	<i>Electrical Special</i>	One dedicated R-1 for mini-refrigerator
<i>Fixed Equipment 2:</i>		<b>DIV 26 - LIGHTING Chapter 19</b>	
<i>Fixed Equipment 3:</i>		<i>Lighting Fixture:</i>	L-2: Lighting Fixture, Recessed 2x2 or 2x4 Acrylic Lens, 80+ CRI Lamp
		<i>Fixture Types Optional/Special:</i>	L-7: Lighting Fixture, Recessed 6" Downlight, 85+ CRI Lamp
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor
		<i>Lighting Special</i>	





DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
<i>Furnishings and Equipment 1:</i>	Below-counter Refrigerator	<i>Phone Outlets:</i>	N/A
<i>Furnishings and Equipment 2:</i>	Waste Bin	<i>Data Outlets:</i>	Data 01: Single data port
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
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.		<i>CCTV Camera:</i>	N/A
Furniture: One Lounge Chair; one 24" square table next to chair		<i>IDS:</i>	N/A
		<i>Access Control:</i>	N/A
		<i>Duress System</i>	Mushroom Duress button, wall mounted
		<i>Security Special Requirements:</i>	
SCHEMATIC PLAN		Lactation Support Room	
		CRG-03-05	



Lactation Support Room  
CRG-03-05

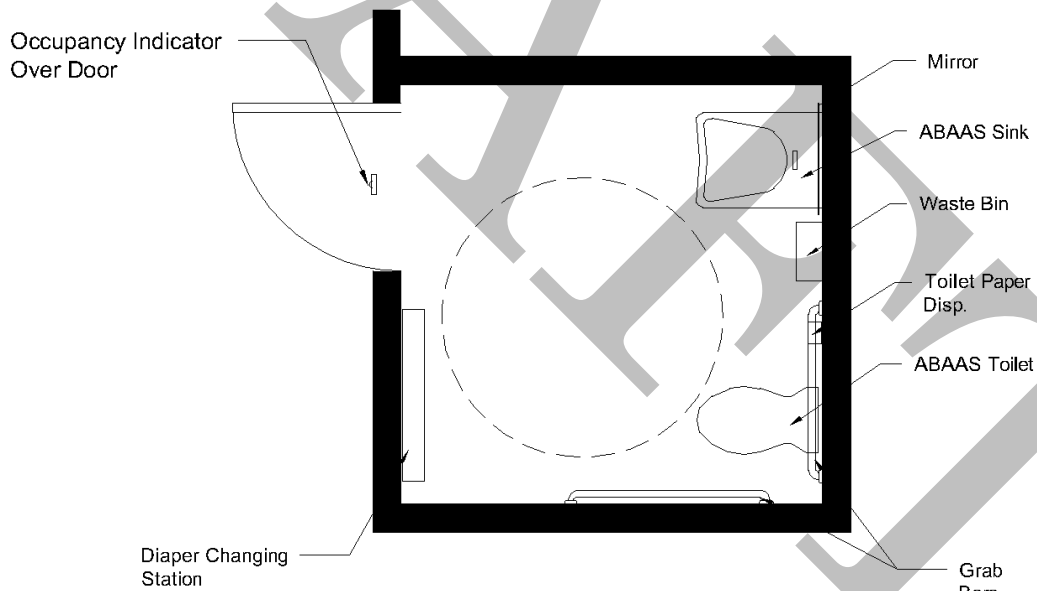
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<b>ROOM FUNCTION</b> Public Male and Female Restrooms		<b>Room Code:</b> CRG-03-06	<b>3.0 STAFF SUPPORT SPACES</b>
<b>ROOM SIGN</b> Men [or] Women		5/18/2018 1:58 PM	
ABAAS compliant public restrooms must be provided and be accessible to visitors and staff The number of fixtures including diaper-changing facilities will be determined depending on the anticipated public visitors.			<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>	
60 SF (min)	Varies	Sprinkler Head Type: SPKLR-09 Detention Grade Pendant	
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		Fire Special Requirements: None	
Door Type:	B-B Hollow Metal, Full flush, seamless, 36" x 7'-0" x 1-3/4"	<b>DIV 22 - PLUMBING Chapter 17</b>	
Door Frame:	HM-1 Interior, 12 gauge hollow metal, fully welded	Fixtures and Fittings 1: WC-1: Floor Mounted Toilet - For Flush Valve	
Door Lockset Group:	B Mortise Lever Lockset w/ Thumb Turn - Entrance Function	Fixtures and Fittings 2: FV-1: Flush Valve for WC-1 - Sensor operated, hardwired, low flow 1.28 gpf	
Door Hardware Cylinder:	A-3: Cylinder, keyed under a CBP Master, like Toilet and PT rooms	Fixtures and Fittings 3: UR-1A: Wall Hung Urinal - For Flush Valve - ABAAS	
Door Hardware Group:	D Door Stop, K Automatic Door Closer	Fixtures and Fittings 4:	
Interior Window:	N/A	Fixtures and Fittings 5: LAV-1A: Wall Hung Basin - Battery Powered Faucet	
Exterior Windows:	N/A	Fixtures and Fittings 6: FC-2 Battery Powered Faucet, 4" 0.5 GPM	
Exterior Window / Door Glazing:	N/A	Fixtures and Fittings 7: FD-1: Floor Drains - Finished Area	
Special Requirements:	Door shall swing outward to prevent any potential barricade.	Plumbing Special Min. 1 WC-1A, UR-1, and LAV-1A conform to ABAAS. For male restrooms use urinal	
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>	
Acoustic Separation:	STC 45: Minimum sound isolation	Supply Register: S-6: Security Diffuser	
Floor Finish:	FF-07 Ceramic Tile	Return Register: RR-4: Security Exhaust Grille	
Base:	BF-02 Ceramic Tile Base	Temp Summer 75° (max)	
Wall Construction:	Wall-08 CMU - 8"	Temp Winter 72° (min)	
Wall Finish:	WF-08: Ceramic Tile, Partial height	Temp Control:	
Ceiling Const. / Finish:	CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted	Humidity Range:	
Ceiling Remark:	Suspended acoustic tile not permitted.	Special Security:	
Ceiling Height:	9'-0"	Mech Special Requirements: Negative pressure, 100% exhaust, Min 10 air changes per hour.	
Alternate Construction:		<b>DIV 26 - ELECTRICAL Chapter 19</b>	
Const Special Requirements:	All access panels must be secured through tamperproof screws or locking devices.	Receptacles: N/A	
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		Other Electrical Receptacles:	
Fixed Equipment 1:	Baby Changing Station, SS framed glass Mirror, Soap dispenser, TP dispenser	Electrical Special:	
Fixed Equipment 2:	Paper towel dispenser w/ integrated Waste receptacle	<b>DIV 26 - LIGHTING Chapter 19</b>	
Fixed Equipment 3:	Hand Dryer with separate Waste Receptacle is optional.	Lighting Fixture: L-8: Lighting Fixture, Recessed Mounted Lensed Down Light	
		Fixture Types 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.	



DIV 10 - FURNISHINGS AND EQUIPMENT		Chapter 14	DIV 27 - COMMUNICATIONS		Chapter 20
Furnishings and Equipment 1:	N/A		Phone Outlets:	N/A	
Furnishings and Equipment 2:			Data Outlets:	N/A	
Furnishings and Equipment 3:			Communications Special		
OTHER REQUIREMENTS			DIV 28 - SECURITY		Chapter 21
			CCTV Camera:	N/A	
			IDS:	N/A	
			Access Control:	N/A	
			Duress System	N/A	
			Security Special Requirements:		
SCHEMATIC PLAN		Public Male and Female Restrooms			CRG-03-06



**Public Restroom**  
CRG-03-06

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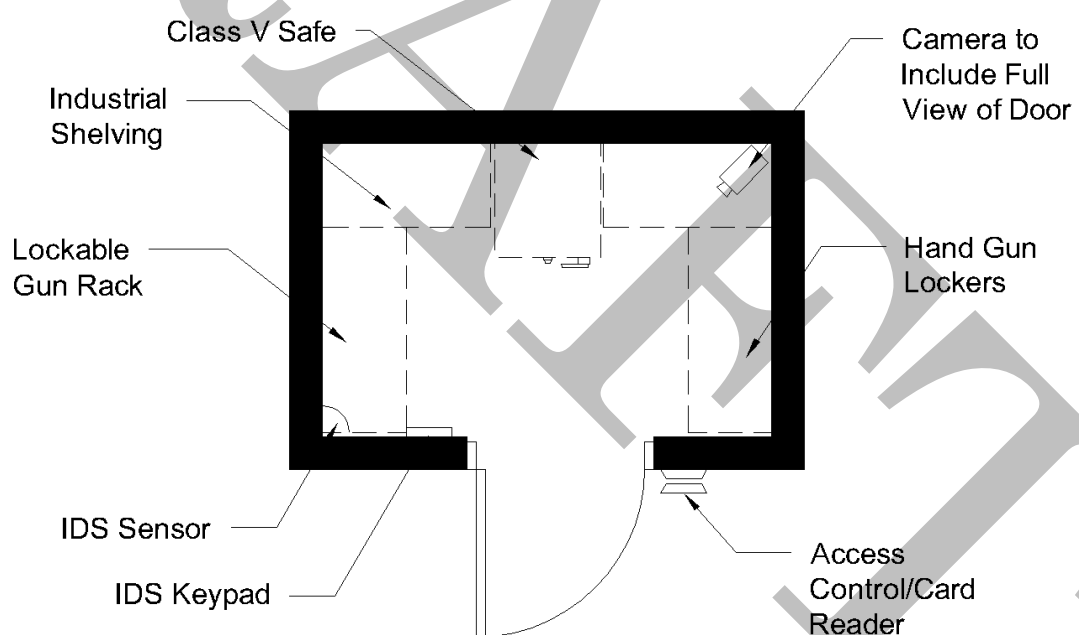
<b>ROOM FUNCTION</b> <b>Weapons Storage</b>		<b>Room Code:</b> <b>CRG-03-07</b>	<b>3.0 STAFF SUPPORT SPACES</b>	
<b>ROOM SIGN</b> <b>Storage</b>		10/30/2018 10:22 AM		
Weapons Storage is a secure room for the storage of weapons and use-of-force equipment and related items required to support CBP operations at the location. The Weapons Storage Room is within the Operational Support area.				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
<b>100 SF</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
<b>Chapter 14</b>		<i>Fire Special Requirements:</i>		
<i>Door Type:</i>	SD-STD-01.01, Revision G (Amended) (Opaque) 5 min FE	<i>Fixtures and Fittings 1:</i>	NA	
<i>Door Frame:</i>	Formed, reinforced and welded steel.	<i>Fixtures and Fittings 2:</i>		
<i>Door Lockset Group:</i>	G FF-L-2890B Rated High Security Electromechanical Lock (X-10 or equivalent)	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Cylinder:</i>	A-2: Cylinder, keyed individually NOT under a CBP Master	<i>Fixtures and Fittings 4:</i>		
<i>Door Hardware Group:</i>	B Automatic Door Bottom, J Non-Removable Hinges (outswing), X Power Transfer Hinge	<i>Fixtures and Fittings 5:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Plumbing Special</i>		
<i>Special Requirements:</i>	see below			
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<b>Chapter 14</b>		<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<i>Return Register:</i>	RR-2: Return Grille	
<i>Floor Finish:</i>	FF-03 Concrete, troweled, uniform texture and appearance, sealed	<i>Temp Summer</i>	75° (max)	
<i>Base:</i>	N/A	<i>Temp Winter</i>	72° (min)	
<i>Wall Construction:</i>	Wall-03 Gypsum Board on #9(10 Ga) Expanded Metal Mesh on Stud, Sound Insulation	<i>Temp Control:</i>	Either: Room or Zone Temperature control	
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss	<i>Humidity Range:</i>	45% (+ / -5)	
<i>Ceiling Const. / Finish:</i>	CF-02: 5/8" Gypsum Board over #9(10 Ga) Expanded Metal Mesh, Painted	<i>Special Security:</i>	Provide with 1/2" steel bars 6" OC each way for any openings over 96 square Inches.	
<i>Ceiling Remark:</i>		<i>Mech Special Requirements:</i>		
<i>Ceiling Height:</i>	9' min			
<i>Alternate Construction:</i>	Wall: 8" CMU - vertical rebar at 16"OC (every block), fully grouted. Ceiling: concrete slab	<b>DIV 26 - ELECTRICAL</b>		
<i>Const Special Requirements:</i>	Installation of expanded wire mesh must be inspected by CBP prior to covering.	<b>Chapter 19</b>		
<b>DIV 10 - FIXED EQUIPMENT</b>		<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall	
<b>Chapter 14</b>		<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 1:</i>	Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H	<i>Electrical Special</i>	(2) Receptacles minimum	
<i>Fixed Equipment 2:</i>	GSA Class V Safe, minimum of two drawers, FF-L-2740B lock on each drawer	<b>DIV 26 - LIGHTING</b>		
<i>Fixed Equipment 3:</i>		<b>Chapter 19</b>		
		<i>Lighting Fixture:</i>	L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens	
		<i>Fixture Types Optional/Special:</i>	N/A	
		<i>Lighting Control:</i>	LC-4: Combination Wall Switch with Occupancy Sensor	
		<i>Lighting Special</i>	Provide 20 FC at floor level.	



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14	
Furnishings and Equipment 1:	Gun Rack, Lockable, Wall-mount, Handgun Locker(s)
Furnishings and Equipment 2:	
Furnishings and Equipment 3:	
OTHER REQUIREMENTS	
<p>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.</p> <p>Equipment: Lockable metal gun lockers (4 ½" 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.</p>	

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:	If not a 24 H operation, CCTV and alarms monitored by port security and local law enforcement. Camera positioned within room.

**SCHEMATIC PLAN Weapons Storage CRG-03-07**



**Weapons Storage**  
CRG-03-07

NOT TO SCALE  
For Reference Purposes Only



<b>ROOM FUNCTION</b> Day Kennel		<b>Room Code:</b> CRG-03-08	<b>3.0 STAFF SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Day Kennel		10/30/2018 10:50 AM		
<p>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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
300 SF	N/A	<i>Sprinkler Head Type:</i> SPKLR-01 Pendant		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Frame:</i>	HM-2 Interior, 12 gauge hollow metal, fully welded, with sidelite	<i>Fixtures and Fittings 1:</i>	HB-1: Hose and Supply Boxes - Hose Valve - Bent Nose, Freeze Proof	
<i>Door Lockset Group:</i>	C Cylindrical Lever Lockset - Storeroom Function	<i>Fixtures and Fittings 2:</i>	K-9 Tub Stainless steel tub on legs with ramp	
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>	FD-1: Floor Drains - Finished Area	
<i>Door Hardware Group:</i>	D Door Stop, E Door Threshold, K Automatic Door Closer	<i>Fixtures and Fittings 4:</i>	SK-4: Double drain board stainless steel sink and stainless steel backsplash.	
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>	FC-1 Two handle faucet, 8" centerset, Gooseneck spout, 1.5 GPM	
<i>Exterior Windows:</i>	Aluminum Exterior Storefront System	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>	GL-02 Low-E Insulating Glazing, tinted	<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>	Doors: Moisture resistant epoxy coating	<i>Plumbing Special</i>	Provide hot and cold water connection to HB-1. Provide cold water supply to ice-maker.	
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	STC 55: Excellent	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Floor Finish:</i>	FF-10 Concrete, w/ seamless epoxy-resin flooring system, slope to floor drain(s).	<i>Return Register:</i>	RR-2: Return Grille	
<i>Base:</i>	BF-04 Integral with seamless flooring, 8" H	<i>Temp Summer</i>	75° (max)	
<i>Wall Construction:</i>	Wall-08 CMU - 8"	<i>Temp Winter</i>	72° (min)	
<i>Wall Finish:</i>	WF-15: Paint, Epoxy, Semi-gloss	<i>Temp Control:</i>	Room: Dedicated Room Temperature control	
<i>Ceiling Const. / Finish:</i>	CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Remark:</i>	Enamel paint	<i>Special Security:</i>	N/A	
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>	For Runs and connecting corridor: Negative pressure, 100% exhaust to outdoors. Vent separately, Min 10 air changes per hour.	
<i>Alternate Construction:</i>	Exposed with two coats of epoxy paint required on deck and exposed pipes	<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Const Special Requirements:</i>	Slip resistant floor not abrasive to animal feet.	<i>Receptacles:</i>	R-6B: Receptacle, Standard GFCl, 40" AFF, 42" max O.C., all walls	
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 1:</i>		<i>Electrical Special</i>		
<i>Fixed Equipment 2:</i>		<b>DIV 26 - LIGHTING Chapter 19</b>		
<i>Fixed Equipment 3:</i>	Retractable hose at center or at both ends of room	<i>Lighting Fixture:</i>	L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens	
		<i>Fixture Types Optional/Special:</i>	L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens	
		<i>Lighting Control:</i>	LC-5: Combination Wall Switch with Occupancy Sensor & Dimmer	
		<i>Lighting Special</i>	Provide 50 FC at 36" AFF	



**DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14**

<i>Furnishings and Equipment 1:</i>	30" (min) Refrigerator/Freezer, Countertop Microwave, Telephone
<i>Furnishings and Equipment 2:</i>	ABS Dog Resting Bench with Bed
<i>Furnishings and Equipment 3:</i>	

**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.

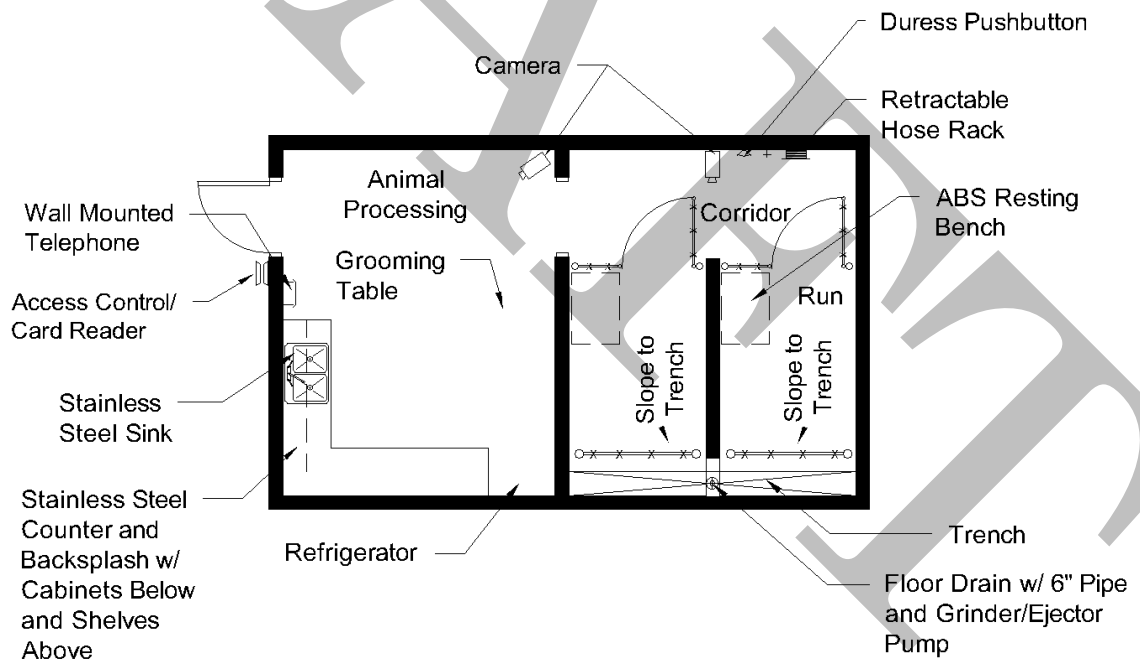
**DIV 27 - COMMUNICATIONS Chapter 20**

<i>Phone Outlets:</i>	Phone 03 Single RJ-45 phone port, Wall mounted
<i>Data Outlets:</i>	N/A
<i>Communications Special</i>	

**DIV 28 - SECURITY Chapter 21**

<i>CCTV Camera:</i>	Fixed CCTV wide-angle lens camera(s). Position: monitor inside of door & kennel runs.
<i>IDS:</i>	N/A
<i>Access Control:</i>	Two factor, APL-listed card reader, DPS
<i>Duress System</i>	Mushroom Duress button, wall mounted
<i>Security Special Requirements:</i>	Duress activated emergency strobe light outside of door.

**SCHEMATIC PLAN Day Kennel CRG-03-08**



**Day Kennel**  
CRG-03-08

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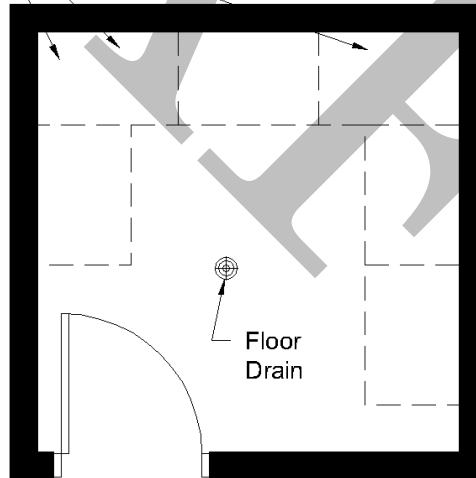
ROOM FUNCTION <b>Canine Storage</b>		Room Code: <b>CRG-03-09</b>	<b>3.0 STAFF SUPPORT SPACES</b>	
ROOM SIGN <b>Storage</b>		3/12/2019 2:08 PM		
<p>The Canine Storage is for the storage of miscellaneous non-sensitive items necessary to operate the kennel and provide animal care. It may serve as the vestibule to other storage areas, which are located outside of animal occupied areas. The Canine Storage is adjacent to other canine spaces.</p>				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
<b>80 SF</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i> SPKLR-01 Pendant		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i> FD-1: Floor Drains - Finished Area		
<i>Door Lockset Group:</i>	C Cylindrical Lever Lockset - Storeroom Function	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>		
<i>Door Hardware Group:</i>	D Door Stop, K Automatic Door Closer	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>		<i>Plumbing Special</i>		
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<i>Supply Register:</i> S-2: Square Ceiling Diffuser		
<i>Floor Finish:</i>	FF-10 Concrete, w/ seamless epoxy-resin flooring system, slope to floor drain(s).	<i>Return Register:</i> RR-2: Return Grille		
<i>Base:</i>	BF-04 Integral with seamless flooring, 8" H	<i>Temp Summer:</i> 75° (max)		
<i>Wall Construction:</i>	Wall-02 Gypsum Board on Metal Stud, Sound Insulation	<i>Temp Winter:</i> 72° (min)		
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss	<i>Temp Control:</i> Room: Dedicated Room Temperature control		
<i>Ceiling Const. / Finish:</i>	CF-01: Gypsum Board, 5/8" Regular, Painted	<i>Humidity Range:</i> 30% to 60%		
<i>Ceiling Remark:</i>	Ceiling: painted 5/8" gypsum board or open structure, two coats of epoxy paint on deck/pipes	<i>Special Security:</i> N/A		
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>		
<i>Alternate Construction:</i>	Walls: 8" CMU	<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Const Special Requirements:</i>	All joints, corners and edges must be sealed to prevent cross-contamination of scents.	<i>Receptacles:</i> R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall		
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 1:</i>	Metal Shelving, Heavy Duty, 5 shelf, 18" x 36" x 85"H	<i>Electrical Special</i> Mount all receptacles 40" AFF.		
<i>Fixed Equipment 2:</i>		<b>DIV 26 - LIGHTING Chapter 19</b>		
<i>Fixed Equipment 3:</i>		<i>Lighting Fixture:</i> L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens		
		<i>Fixture Types Optional/Special:</i> L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens		
		<i>Lighting Control:</i> LC-4: Combination Wall Switch with Occupancy Sensor		
		<i>Lighting Special</i> Provide 50 FC at working surface		





<b>DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14</b>		<b>DIV 27 - COMMUNICATIONS Chapter 20</b>	
<i>Furnishings and Equipment 1:</i>	N/A	<i>Phone Outlets:</i>	N/A
<i>Furnishings and Equipment 2:</i>		<i>Data Outlets:</i>	N/A
<i>Furnishings and Equipment 3:</i>		<i>Communications Special</i>	
<b>OTHER REQUIREMENTS</b>		<b>DIV 28 - SECURITY Chapter 21</b>	
		<i>CCTV Camera:</i>	N/A
		<i>IDS:</i>	N/A
		<i>Access Control:</i>	N/A
		<i>Duress System</i>	N/A
		<i>Security Special Requirements:</i>	
<b>SCHEMATIC PLAN</b>		<b>Canine Storage</b>	
		<b>CRG-03-09</b>	

Heavy Duty  
Metal Shelves



**Canine Storage General**

CRG-03-09

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**U.S. Customs and Border Protection**

<b>ROOM FUNCTION</b> Canine Team Area		<b>Room Code:</b> CRG-03-10	<b>3.0 STAFF SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Canine		5/18/2018 1:59 PM		
<p>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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
150 SF	N/A	<b>Sprinkler Head Type:</b> SPKLR-01 Pendant <b>Fire Special Requirements:</b>		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<b>DIV 22 - PLUMBING Chapter 17</b>		
<b>Door Type:</b> B-B-01 Hollow Metal, Full flush, seamless		<b>Fixtures and Fittings 1:</b> HB-1: Hose and Supply Boxes - Hose Valve - Bent Nose, Freeze Proof <b>Fixtures and Fittings 2:</b> K-9 Tub Stainless steel tub on legs with ramp <b>Fixtures and Fittings 3:</b> FD-1: Floor Drains - Finished Area <b>Fixtures and Fittings 4:</b> <b>Fixtures and Fittings 5:</b> <b>Fixtures and Fittings 6:</b> <b>Fixtures and Fittings 7:</b>		
<b>Door Frame:</b> HM-2 Interior, 12 gauge hollow metal, fully welded, with sidelite		<b>Plumbing Special</b> Provide hot and cold water connection to HB-1. Provide hose reel to connect to HB-1.		
<b>Door Lockset Group:</b> C Cylindrical Lever Lockset - Storeroom Function		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<b>Door Hardware Cylinder:</b> A-1: Cylinder, keyed individually under a CBP Master		<b>Supply Register:</b> S-2: Square Ceiling Diffuser <b>Return Register:</b> RR-2: Return Grille <b>Temp Summer:</b> 75° (max) <b>Temp Winter:</b> 72° (min) <b>Temp Control:</b> Room: Dedicated Room Temperature control <b>Humidity Range:</b> 30% to 60% <b>Special Security:</b> N/A		
<b>Door Hardware Group:</b> D Door Stop, E Door Threshold, K Automatic Door Closer		<b>Mech Special Requirements:</b>		
<b>Interior Window:</b> N/A		<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<b>Exterior Windows:</b> See Other Requirements		<b>Receptacles:</b> R-6B: Receptacle, Standard GFCl, 40" AFF, 42" max O.C., all walls <b>Other Electrical Receptacles:</b> <b>Electrical Special</b>		
<b>Exterior Window / Door Glazing:</b> GL-02 Low-E Insulating Glazing, tinted		<b>DIV 26 - LIGHTING Chapter 19</b>		
<b>Special Requirements:</b> Doors: Moisture resistant epoxy coating		<b>Lighting Fixture:</b> L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens <b>Fixture Types Optional/Special:</b> L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens <b>Lighting Control:</b> LC-5: Combination Wall Switch with Occupancy Sensor & Dimmer <b>Lighting Special</b> Provide 50 FC at 36" AFF		
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>				
<b>Acoustic Separation:</b> STC 55: Excellent				
<b>Floor Finish:</b> FF-10 Concrete, w/ seamless epoxy-resin flooring system, slope to floor drain(s).				
<b>Base:</b> BF-04 Integral with seamless flooring, 8" H				
<b>Wall Construction:</b> Wall-08 CMU - 8"				
<b>Wall Finish:</b> WF-15: Paint, Epoxy, Semi-gloss				
<b>Ceiling Const. / Finish:</b> CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted				
<b>Ceiling Remark:</b> Enamel paint				
<b>Ceiling Height:</b> 9' min				
<b>Alternate Construction:</b> Exposed with two coats of epoxy paint required on deck and exposed pipes				
<b>Const Special Requirements:</b> Slip resistant floor not abrasive to animal feet.				
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>				
<b>Fixed Equipment 1:</b>				
<b>Fixed Equipment 2:</b>				
<b>Fixed Equipment 3:</b> Retractable hose at center or at both ends of room				

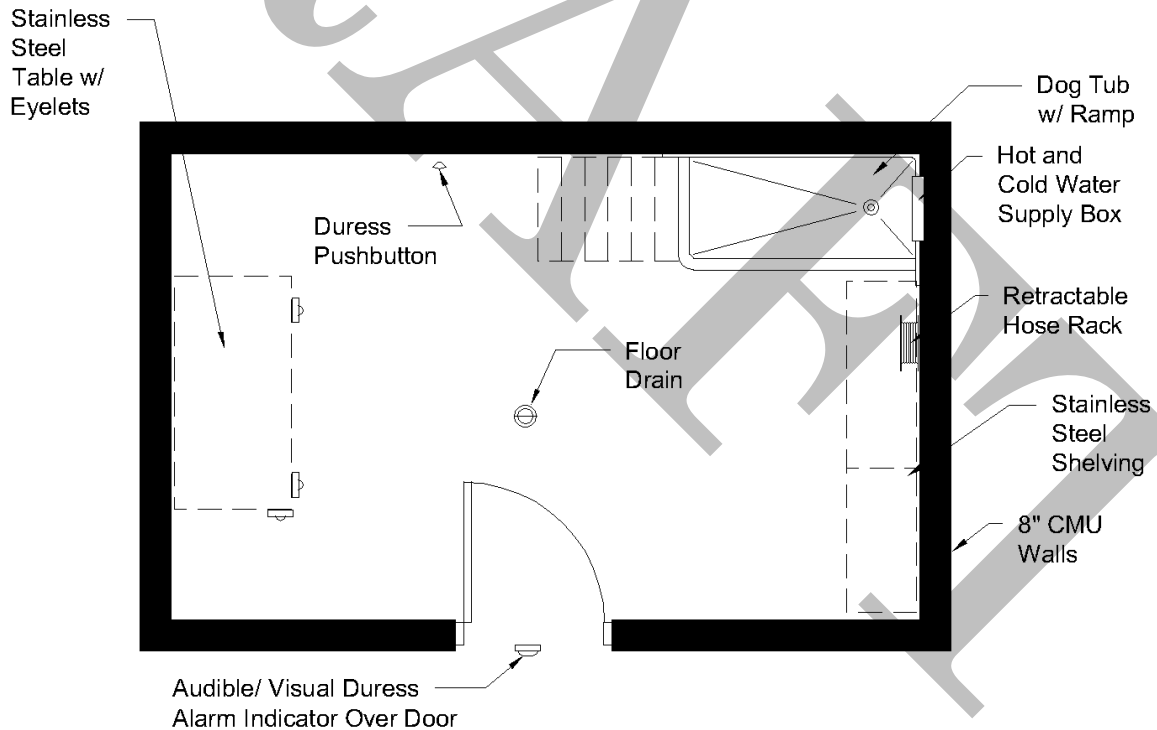


**U.S. Customs and Border Protection**

DIV 10 - FURNISHINGS AND EQUIPMENT		Chapter 14
Furnishings and Equipment 1:	N/A	
Furnishings and Equipment 2:		
Furnishings and Equipment 3:		
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
Phone Outlets:	Phone 03	Single RJ-45 phone port, Wall mounted
Data Outlets:	N/A	
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:	Duress activated emergency strobe light outside of door.	

**SCHEMATIC PLAN** **Canine Team Area** **CRG-03-10**



**Canine Team Area**  
CRG-03-10

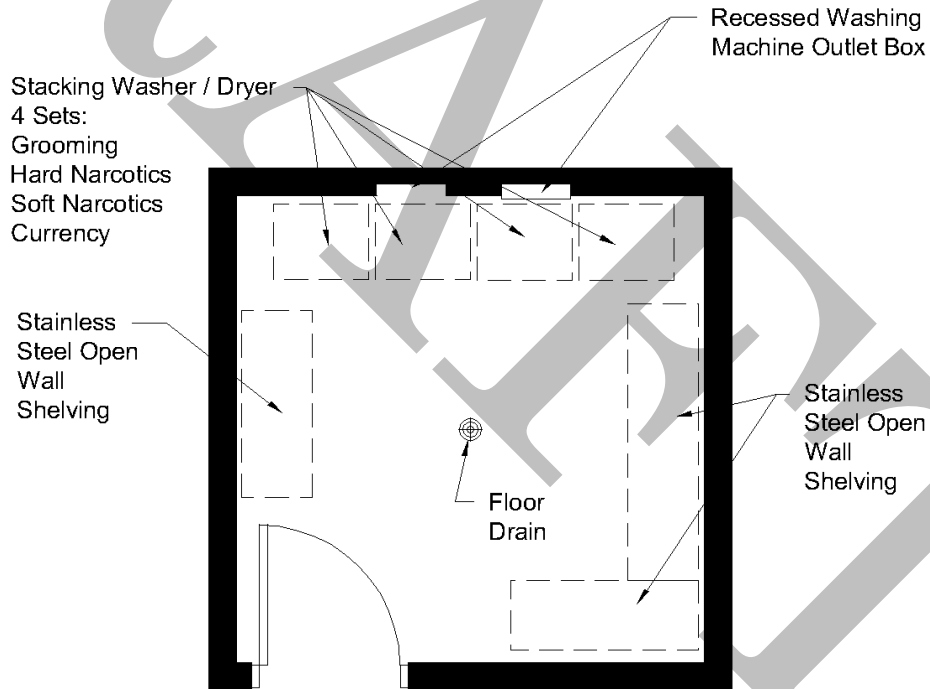
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<b>ROOM FUNCTION</b> Laundry Room		<b>Room Code:</b> CRG-03-11	<b>3.0 STAFF SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Laundry Room		5/18/2018 1:59 PM		
<p>The laundry room should be an area or alcove with separate stackable washer and dryer units for the 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.</p>				<input checked="" type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
80 SF (min)	N/A	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant	
<b>DIV 08 - DOORS AND WINDOWS</b>		<i>Fire Special Requirements:</i>		
<b>Chapter 14</b>				
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING</b>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<b>Chapter 17</b>		
<i>Door Lockset Group:</i>	C Cylindrical Lever Lockset - Storeroom Function	<i>Fixtures and Fittings 1:</i>	FD-1: Floor Drains - Finished Area	
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 2:</i>		
<i>Door Hardware Group:</i>	D Door Stop, K Automatic Door Closer	<i>Fixtures and Fittings 3:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 4:</i>		
<i>Exterior Windows:</i>	Aluminum Framed Windows	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Window / Door Glazing:</i>	GL-02 Low-E Insulating Glazing, tinted	<i>Fixtures and Fittings 6:</i>		
<i>Special Requirements:</i>	Doors: Moisture resistant epoxy coating. Exterior windows are optional	<i>Fixtures and Fittings 7:</i>		
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		<i>Plumbing Special</i>		Provide recessed washing machine outlet box with connections for drain, vent, hot and cold water.
<b>Chapter 14</b>		<b>DIV 23 - MECHANICAL</b>		
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<b>Chapter 18</b>		
<i>Floor Finish:</i>	FF-10 Concrete, w/ seamless epoxy-resin flooring system, slope to floor drain(s).	<i>Supply Register:</i>	S-2: Square Ceiling Diffuser	
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Return Register:</i>	RR-2: Return Grille	
<i>Wall Construction:</i>	Wall-04 Gypsum Board on Metal Stud, uninsulated	<i>Temp Summer:</i>	75° (max)	
<i>Wall Finish:</i>	WF-04: Gypsum Board, 5/8" Moisture Resistant, Painted	<i>Temp Winter:</i>	72° (min)	
<i>Ceiling Const. / Finish:</i>	CF-07 Gypsum Board, 5/8" Moisture Resistant, Painted	<i>Temp Control:</i>	Room: Dedicated Room Temperature control	
<i>Ceiling Remark:</i>	Enamel paint	<i>Humidity Range:</i>	30% to 60%	
<i>Ceiling Height:</i>	9' min	<i>Special Security:</i>	N/A	
<i>Alternate Construction:</i>	Exposed with two coats of epoxy paint required on deck and exposed pipes	<i>Mech Special Requirements:</i>	Dryer vents exhausted outside and away from animal housing air intakes. Wall exhaust for shortest duct run is preferred.	
<i>Const Special Requirements:</i>	Match Kennel Run flooring.	<b>DIV 26 - ELECTRICAL</b>		
<b>DIV 10 - FIXED EQUIPMENT</b>		<b>Chapter 19</b>		
<b>Chapter 14</b>		<i>Receptacles:</i>	R-6: Receptacle, Standard GFCI	
<i>Fixed Equipment 1:</i>	Stainless Steel Open Wall Shelving	<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 2:</i>		<i>Electrical Special</i>	See Other Requirements	
<i>Fixed Equipment 3:</i>	Washer / Dryer, Full size Stacking	<b>DIV 26 - LIGHTING</b>		
		<b>Chapter 19</b>		
		<i>Lighting Fixture:</i>	L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens	
		<i>Fixture Types Optional/Special:</i>	L-6: Lighting Fixture, Surface Mounted 1x4 Acrylic Lens	
		<i>Lighting Control:</i>	LC-2: Dimmer Switch	
		<i>Lighting Special</i>	Provide 50 FC at working surface.	



DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
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 Chapter 21	
<p>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.</p>		CCTV Camera:	N/A
		IDS:	N/A
		Access Control:	N/A
		Duress System	N/A
		Security Special Requirements:	
SCHEMATIC PLAN		Laundry Room	
		CRG-03-11	



**Laundry Room**

CRG-03-11

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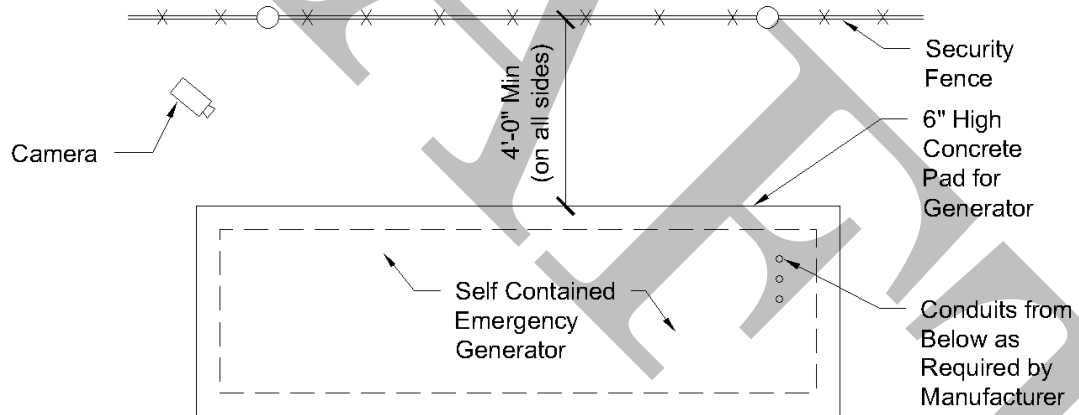
ROOM FUNCTION <b>Emergency Generator</b>		Room Code: <b>CRG-04-01</b>	<b>4.0 BUILDING SUPPORT SPACES</b>
ROOM SIGN <b>Electrical Room</b>		10/30/2018 10:57 AM	
<p>The Emergency Generator provides back-up power when electric power from the local utility is interrupted. Facilities must be provided with 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).</p>			<input type="checkbox"/> Cargo
ROOM SIZE: ROOM OCCUPANCY		DIV 21 - FIRE SUPPRESSION Chapter 16	
<b>200 SF</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i>	SPKLR-01 Pendant
DIV 08 - DOORS AND WINDOWS Chapter 14		<i>Fire Special Requirements:</i>	Provide automatic smoke detectors in accordance with NFPA 72.
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	DIV 22 - PLUMBING Chapter 17	
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>	NA
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<i>Fixtures and Fittings 2:</i>	
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Fixtures and Fittings 3:</i>	
<i>Door Hardware Group:</i>	D Door Stop, K Automatic Door Closer, X Power Transfer Hinge	<i>Fixtures and Fittings 4:</i>	
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>	
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>	
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>	
<i>Special Requirements:</i>	Hardware: C - Door Coordinator at double doors, J - Non-Removable Hinges (outswing)	<i>Plumbing Special</i>	
DIV 09 - CONSTRUCTION AND FINISHES Chapter 14		DIV 23 - MECHANICAL Chapter 18	
<i>Acoustic Separation:</i>	N/A	<i>Supply Register:</i>	N/A
<i>Floor Finish:</i>	FF-03 Concrete, troweled, uniform texture and appearance, sealed	<i>Return Register:</i>	N/A
<i>Base:</i>	N/A	<i>Temp Summer</i>	
<i>Wall Construction:</i>	Wall-08 CMU - 8"	<i>Temp Winter</i>	
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss	<i>Temp Control:</i>	N/A
<i>Ceiling Const. / Finish:</i>	CF-13 HD Galv Chain Link Roof	<i>Humidity Range:</i>	N/A
<i>Ceiling Remark:</i>		<i>Special Security:</i>	N/A
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>	Coordinate combustion air and exhaust air requirements for louver sizing.
<i>Alternate Construction:</i>	Prefabricated metal enclosure. HD Galv Chain Link Fence - Coordinate wall construction w/ SMD	DIV 26 - ELECTRICAL Chapter 19	
<i>Const Special Requirements:</i>	Wall Height must exceed the total height of the generator as to conceal the generator.	<i>Receptacles:</i>	R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall
DIV 10 - FIXED EQUIPMENT Chapter 14		<i>Other Electrical Receptacles:</i>	
<i>Fixed Equipment 1:</i>	N/A	<i>Electrical Special</i>	
<i>Fixed Equipment 2:</i>		DIV 26 - LIGHTING Chapter 19	
<i>Fixed Equipment 3:</i>	Generator, back-up generator unit components, fuel storage.	<i>Lighting Fixture:</i>	L-9: Lighting Fixture, Pendant Mounted Industrial Protected
		<i>Fixture Types Optional/Special:</i>	L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens
		<i>Lighting Control:</i>	LC-1: Light Switch, LC-3: Occupancy Sensor
		<i>Lighting Special</i>	Provide 30 FC at floor level.



DIV 10 - FURNISHINGS AND EQUIPMENT		Chapter 14
Furnishings and Equipment 1:	N/A	
Furnishings and Equipment 2:		
Furnishings and Equipment 3:		
OTHER REQUIREMENTS		
<p>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.</p> <p>Requirement for 150% capacity must be evaluated on a Port-specific basis. See Chapter 19 for a complete discussion of emergency power considerations.</p> <p>All walls/ sides must be set a minimum of 4ft away (on all sides) from the emergency generator/ fuel tank.</p>		

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

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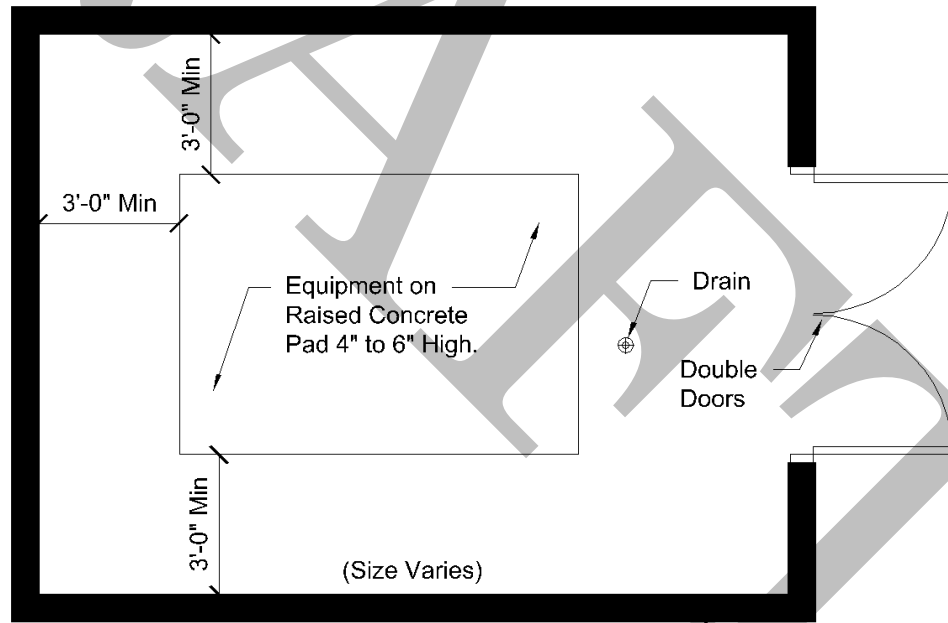


<b>ROOM FUNCTION</b> Mechanical Room		Room Code: <b>CRG-04-02</b>	<b>4.0 BUILDING SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Mechanical Room		6/22/2018 3:59 PM		
<p>The Mechanical Room provides a combined space for all utilities including the HVAC and domestic hot water equipment, the water treatment system. 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.</p>				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
Varies	N/A	<i>Sprinkler Head Type:</i> SPKLR-01 Pendant  <i>Fire Special Requirements:</i>		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<i>Fixtures and Fittings 1:</i> FD-2: Floor Drains - Vandal proof, 6"  <i>Fixtures and Fittings 2:</i>  <i>Fixtures and Fittings 3:</i>  <i>Fixtures and Fittings 4:</i>  <i>Fixtures and Fittings 5:</i>  <i>Fixtures and Fittings 6:</i>  <i>Fixtures and Fittings 7:</i>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Plumbing Special</i> Provide funnel fittings or partial grates for FD-2 as required by Mechanical equipment.		
<i>Door Lockset Group:</i>	N Electrified Mortise Lock with Lever set and built-in REX function & key override	<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Door Hardware Cylinder:</i>	A-1: Cylinder, keyed individually under a CBP Master	<i>Supply Register:</i> S-1: Perforated Plate Diffuser <i>Return Register:</i> RR-2: Return Grille <i>Temp Summer:</i> 75° (max) <i>Temp Winter:</i> 72° (min) <i>Temp Control:</i> Room: Dedicated Room Temperature control <i>Humidity Range:</i> 50% to 60% <i>Special Security:</i> N/A		
<i>Door Hardware Group:</i>	D Door Stop, G BMAS-UL 634 Level 2, J Non-Removable Hinges (outswing)	<i>Mech Special Requirements:</i> Filtered (HEPA) Exhaust, Room at negative pressure,		
<i>Interior Window:</i>	N/A	<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Exterior Windows:</i>	N/A	<i>Receptacles:</i> R-1: Receptacle, Standard duplex, all walls, spaced at 10'-0" max OC, min 1 / wall, R-2: Receptacle, Surface Mounted  <i>Other Electrical Receptacles:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Electrical Special</i> Convenience receptacles as required by mechanical equipment		
<i>Special Requirements:</i>	X: Power Transfer Hinge, K: Automatic Door Closer	<b>DIV 26 - LIGHTING Chapter 19</b>		
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<i>Lighting Fixture:</i> L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens  <i>Fixture Types Optional/Special:</i> L-9: Lighting Fixture, Pendent Mounted Industrial Protected <i>Lighting Control:</i> LC-1: Light Switch, LC-3: Occupancy Sensor  <i>Lighting Special</i> Provide 30 FC at floor level		
<i>Acoustic Separation:</i>	STC 45: Minimum sound isolation			
<i>Floor Finish:</i>	FF-03 Concrete, troweled, uniform texture and appearance, sealed			
<i>Base:</i>	N/A			
<i>Wall Construction:</i>	Wall-08 CMU - 8"			
<i>Wall Finish:</i>	WF-13: Paint, Semi-gloss			
<i>Ceiling Const. / Finish:</i>	CF-04: Exposed Structure, No Ceiling			
<i>Ceiling Remark:</i>	Exposed with two coats of paint required on deck and exposed pipes.			
<i>Ceiling Height:</i>	9' min			
<i>Alternate Construction:</i>				
<i>Const Special Requirements:</i>	Slope floor to drain			
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>				
<i>Fixed Equipment 1:</i>				
<i>Fixed Equipment 2:</i>				
<i>Fixed Equipment 3:</i>	Mechanical equipment.			





DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14		DIV 27 - COMMUNICATIONS Chapter 20	
Furnishings and Equipment 1:	N/A	Phone Outlets:	Phone 01 Single RJ-45 phone port
Furnishings and Equipment 2:		Data Outlets:	Data 01: Single data port
Furnishings and Equipment 3:		Communications Special	Phone and Data for Building Automation System, locate near equipment controls.
OTHER REQUIREMENTS		DIV 28 - SECURITY Chapter 21	
Special Grounding: As required by equipment manufacturer. UPS (Surge Protection): As required by equipment manufacturer. Emergency Power: Yes.		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:	
SCHEMATIC PLAN		Mechanical Room	
		CRG-04-02	



8" CMU Walls, or Rated Construction as Required by Equipment or Code

**Mechanical Room**  
CRG-04-02

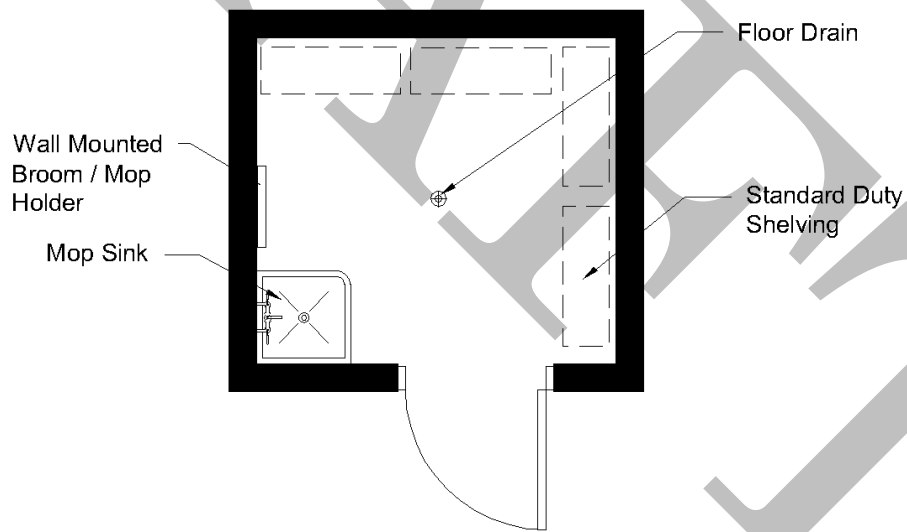
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<b>ROOM FUNCTION</b> <b>Janitor Room</b>		<b>Room Code:</b> <b>CRG-04-03</b>	<b>4.0 BUILDING SUPPORT SPACES</b>	
<b>ROOM SIGN</b> <b>Janitor Room</b>		10/30/2018 10:47 AM		
The Janitor Room is provided for the storage of essential cleaning equipment 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.				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION Chapter 16</b>		
<b>40 SF</b>	<b>N/A</b>	<i>Sprinkler Head Type:</i> SPKLR-08 Semi-Recessed Pendant		
<b>DIV 08 - DOORS AND WINDOWS Chapter 14</b>		<i>Fire Special Requirements:</i>		
<i>Door Type:</i>	B-B-01 Hollow Metal, Full flush, seamless	<b>DIV 22 - PLUMBING Chapter 17</b>		
<i>Door Frame:</i>	HM-1 Interior, 12 gauge hollow metal, fully welded	<i>Fixtures and Fittings 1:</i>		MS-1: Service / Mop Sink - Two Handle Faucet
<i>Door Lockset Group:</i>	C Cylindrical Lever Lockset - Storeroom Function	<i>Fixtures and Fittings 2:</i>		FC-3 Wall mounted Two handle faucet
<i>Door Hardware Cylinder:</i>	A-3: Cylinder, keyed under a CBP Master, like Toilet and PT rooms	<i>Fixtures and Fittings 3:</i>		FD-1: Floor Drains - Finished Area
<i>Door Hardware Group:</i>	D Door Stop, K Automatic Door Closer	<i>Fixtures and Fittings 4:</i>		
<i>Interior Window:</i>	N/A	<i>Fixtures and Fittings 5:</i>		
<i>Exterior Windows:</i>	N/A	<i>Fixtures and Fittings 6:</i>		
<i>Exterior Window / Door Glazing:</i>	N/A	<i>Fixtures and Fittings 7:</i>		
<i>Special Requirements:</i>		<i>Plumbing Special</i>		
<b>DIV 09 - CONSTRUCTION AND FINISHES Chapter 14</b>		<b>DIV 23 - MECHANICAL Chapter 18</b>		
<i>Acoustic Separation:</i>	No Special Acoustical Requirement	<i>Supply Register:</i>		S-3: Supply Grille
<i>Floor Finish:</i>	FF-03 Concrete, troweled, uniform texture and appearance, sealed	<i>Return Register:</i>		RR-2: Return Grille
<i>Base:</i>	BF-01 Rubber Base, 4" H	<i>Temp Summer</i>		75° (max)
<i>Wall Construction:</i>	Wall-04 Gypsum Board on Metal Stud, uninsulated	<i>Temp Winter</i>		72° (min)
<i>Wall Finish:</i>	WF-04: Gypsum Board, 5/8" Moisture Resistant, Painted	<i>Temp Control:</i>		N/A
<i>Ceiling Const. / Finish:</i>	CF-01: Gypsum Board, 5/8" Regular, Painted	<i>Humidity Range:</i>		30% to 60%
<i>Ceiling Remark:</i>		<i>Special Security:</i>		N/A
<i>Ceiling Height:</i>	9' min	<i>Mech Special Requirements:</i>		Negative Pressure. 100% exhaust to outdoors. 10 Air changes minimum exhaust
<i>Alternate Construction:</i>	Walls: 8" CMU	<b>DIV 26 - ELECTRICAL Chapter 19</b>		
<i>Const Special Requirements:</i>	Semi-gloss paint at walls	<i>Receptacles:</i>		R-6: Receptacle, Standard GFCI
<b>DIV 10 - FIXED EQUIPMENT Chapter 14</b>		<i>Other Electrical Receptacles:</i>		
<i>Fixed Equipment 1:</i>	Wall-mounted Broom/Mop Holder	<i>Electrical Special</i>		
<i>Fixed Equipment 2:</i>	Metal Shelving, Standard Duty, 5 shelf, 12" x 36" x 85"H	<b>DIV 26 - LIGHTING Chapter 19</b>		
<i>Fixed Equipment 3:</i>	(3) min shelves, secured to wall.	<i>Lighting Fixture:</i>		L-5: Lighting Fixture, Recessed 1x4 Acrylic Lens
		<i>Fixture Types Optional/Special:</i>		
		<i>Lighting Control:</i>		LC-4: Combination Wall Switch with Occupancy Sensor
		<i>Lighting Special</i>		Provide 20 FC at floor level



DIV 10 - FURNISHINGS AND EQUIPMENT		Chapter 14	DIV 27 - COMMUNICATIONS		Chapter 20
Furnishings and Equipment 1:	N/A		Phone Outlets:	N/A	
Furnishings and Equipment 2:			Data Outlets:	N/A	
Furnishings and Equipment 3:			Communications Special		
OTHER REQUIREMENTS			DIV 28 - SECURITY		Chapter 21
			CCTV Camera:	N/A	
			IDS:	N/A	
			Access Control:	N/A	
			Duress System	N/A	
			Security Special Requirements:		
SCHEMATIC PLAN		Janitor Room			CRG-04-03



**Janitor Room**  
CRG-04-03

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<b>ROOM FUNCTION</b> Utility Yard		<b>Room Code:</b> CRG-04-04	<b>4.0 BUILDING SUPPORT SPACES</b>	
<b>ROOM SIGN</b> Utility Yard		10/30/2018 11:03 AM		
Utility Yard is an exterior, fenced yard to contain mechanical, electrical and utility-related equipment. Area will vary based on equipment requirements.				<input type="checkbox"/> Cargo
<b>ROOM SIZE: ROOM OCCUPANCY</b>		<b>DIV 21 - FIRE SUPPRESSION</b>		<b>Chapter 16</b>
Varies	N/A	Sprinkler Head Type:		
<b>DIV 08 - DOORS AND WINDOWS</b>		Fire Special Requirements:		
Chapter 14		<b>DIV 22 - PLUMBING</b>		<b>Chapter 17</b>
Door Type:		Fixtures and Fittings 1:		
Door Frame:		Fixtures and Fittings 2:		
Door Lockset Group: R Padlock - FF- P-2827A		Fixtures and Fittings 3:		
Door Hardware Cylinder: A-1: Cylinder, keyed individually under a CBP Master		Fixtures and Fittings 4:		
Door Hardware Group:		Fixtures and Fittings 5:		
Interior Window:		Fixtures and Fittings 6:		
Exterior Windows:		Fixtures and Fittings 7:		
Exterior Window / Door Glazing:		Plumbing Special		
Special Requirements: Gates as noted on plan.		<b>DIV 23 - MECHANICAL</b>		<b>Chapter 18</b>
<b>DIV 09 - CONSTRUCTION AND FINISHES</b>		Supply Register:		
Chapter 14		Return Register:		
Acoustic Separation: N/A		Temp Summer		
Floor Finish:		Temp Winter		
Base:		Temp Control:		
Wall Construction: Wall-17 HD Galv. Chain link 12' H		Humidity Range:		
Wall Finish:		Special Security:		
Ceiling Const. / Finish: CF-13 HD Galv Chain Link Roof		Mech Special Requirements:		
Ceiling Remark:		<b>DIV 26 - ELECTRICAL</b>		<b>Chapter 19</b>
Ceiling Height:		Receptacles:		
Alternate Construction:		Other Electrical Receptacles:		
Const Special Requirements:		Electrical Special		
<b>DIV 10 - FIXED EQUIPMENT</b>		<b>DIV 26 - LIGHTING</b>		<b>Chapter 19</b>
Chapter 14		Lighting Fixture:		
Fixed Equipment 1:		Fixture Types Optional/Special:		
Fixed Equipment 2:		Lighting Control:		
Fixed Equipment 3:		Lighting Special		



**DIV 10 - FURNISHINGS AND EQUIPMENT Chapter 14**

Furnishings and Equipment 1:	
Furnishings and Equipment 2:	
Furnishings and Equipment 3:	

**OTHER REQUIREMENTS**

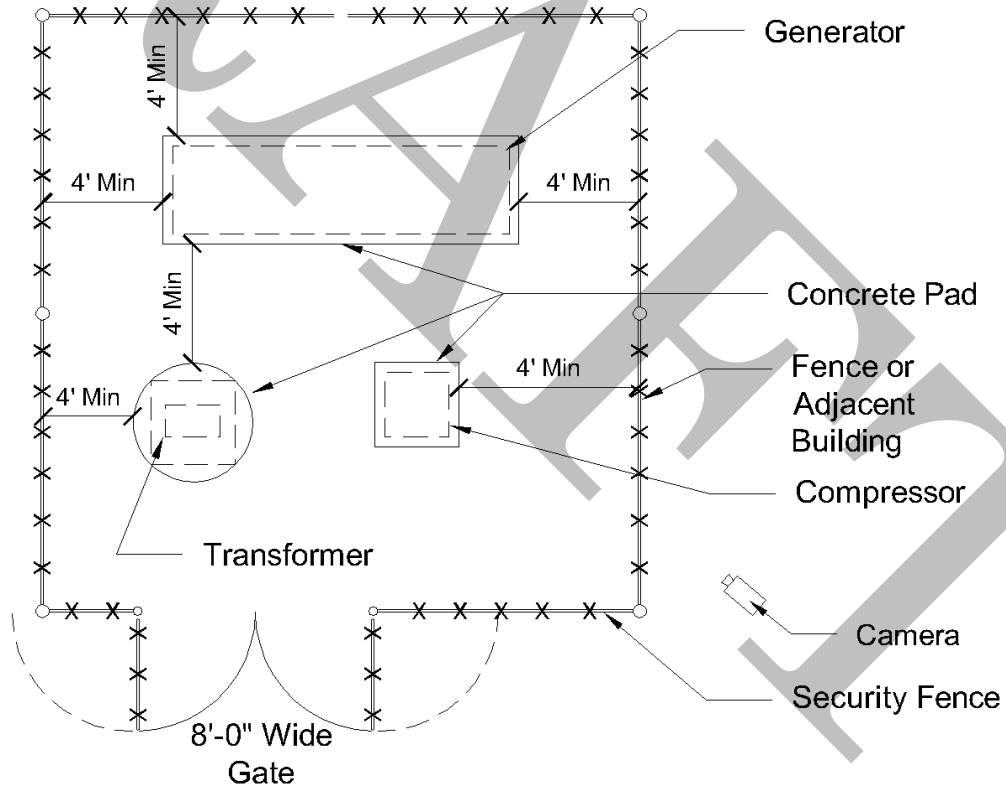

**DIV 27 - COMMUNICATIONS Chapter 20**

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:	

**SCHEMATIC PLAN Utility Yard CRG-04-04**



**Utility Yard**  
CRG-04-04

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# ACRONYMS AND GLOSSARY

## Cargo Facilities Design Standard 2019 (Draft)



**U.S. Customs and  
Border Protection**



**APPENDIX A. ACRONYMS, ABBREVIATIONS, AND GLOSSARY**

**A.1 ACRONYMS**

**A**

5	<b>AABC</b>	<b>Associated Air Balance Council</b>
6	<b>AAMA</b>	<b>American Architectural Manufacturer’s Association</b>
7	<b>AASHTO</b>	<b>American Association of State Highway and Transportation Officials of State Highway and Transportation Officials</b>
8		
9	<b>AAWA</b>	<b>American Water Works Association American Water Works Association American Water Works Association</b>
10		
11	<b>ABAAS</b>	<b>Architectural Barriers Act Accessibility Standard</b>
12	<b>ABA</b>	<b>Architectural Barriers Act</b>
13	<b>ACI</b>	<b>American Concrete Institute American Concrete Institute (ACI).</b>
14	<b>ACS</b>	<b>Access Control System</b>
15	<b>ADA</b>	<b>Americans with Disabilities Act</b>
16	<b>A/E</b>	<b>Architect/Engineer</b>
17	<b>AED</b>	<b>Automated External Defibrillators Automated External Defibrillators</b>
18	<b>AEE</b>	<b>Association of Energy Engineers</b>
19	<b>AFF</b>	<b>Above Finished Floor</b>
20	<b>AHJ</b>	<b>Authority Having Jurisdiction</b>
21	<b>AHU</b>	<b>Air Handling Unit</b>
22	<b>AISC</b>	<b>American Institute of Steel Construction</b>
23	<b>AISI</b>	<b>American Iron and Steel Institute</b>
24	<b>AMO</b>	<b>Office of Air and Marine Operations</b>
25	<b>ANSI</b>	<b>American National Standards Institute</b>
26	<b>AP</b>	<b>Access Point</b>
27	<b>APHIS</b>	<b>Animal and Plant Health Inspection Service</b>



**U.S. Customs and Border Protection**

1	<b>APP</b>	<b>Admissibility and Passenger Programs</b>
2	<b>ASCE</b>	<b>American Society Civil Engineers</b>
3	<b>ASE</b>	<b>Agent Support Equipment</b>
4	<b>ASHRAE</b>	<b>American Society of Heating, Refrigeration, and Air-Conditioning Engineers</b>
5	<b>ASME</b>	<b>American Society of Mechanical Engineers</b>
6	<b>ASR</b>	<b>Alkali-Silica Reactivity</b>
7	<b>ATS</b>	<b>Automatic Transfer Switch</b>
8	<b>AWS</b>	<b>Alarm Workstations</b>
9	<b>AWS</b>	<b>American Welding Society</b>
10	<b>B</b>	
11	<b>BAS</b>	<b>Building automation systems</b>
12	<b>BHMA</b>	<b>Builder's Hardware Manufacturer's Association</b>
13	<b>BIA</b>	<b>Brick Industry Association</b>
14	<b>BLU</b>	<b>Back Light Unit</b>
15	<b>BOCA</b>	<b>Building Officials and Code Administrators International</b>
16	<b>BSDP</b>	<b>Border Security Deployment Program</b>
17	<b>BSSID</b>	<b>Basic Service Set Identifier</b>
18	<b>C</b>	
19	<b>C-TPAT</b>	<b>Customs Trade Partnership Against Terrorism</b>
20	<b>CAVSS</b>	<b>Centralized Area Video Surveillance System</b>
21	<b>CBP</b>	<b>U.S. Customs and Border Protection</b>
22	<b>CBPO</b>	<b>U.S. Customs and Border Protection Officer</b>
23	<b>CCC</b>	<b>CBP Command Center</b>
24	<b>CCS</b>	<b>Cargo and Conveyance Security</b>
25	<b>CCTV</b>	<b>Closed Circuit Television</b>
26	<b>CDC</b>	<b>Centers for Disease Control and Prevention</b>





## U.S. Customs and Border Protection

1	<b>CE</b>	<b>Civil Engineer</b>
2	<b>CEO</b>	<b>Canine Enforcement Officer</b>
3	<b>CERCLA</b>	<b>Comprehensive Environmental Response Compensation and Liability Act</b>
4	<b>CES</b>	<b>Centralized Examination Station</b>
5	<b>CFO</b>	<b>Cargo Facility Operator</b>
6	<b>CFR</b>	<b>Code of Federal Regulations</b>
7	<b>CFS</b>	<b>Container Freight Station</b>
8	<b>CMU</b>	<b>Concrete Masonry Unit</b>
9	<b>CPU</b>	<b>Central Processing Unit</b>
10	<b>CRF</b>	<b>Condensation Resistance Factor</b>
11	<b>CRI</b>	<b>Color Rendering Index</b>
12	<b>CSA</b>	<b>CBP Security Area</b>
13	<b>CSD</b>	<b>Container Security Device</b>
14	<b>CSI</b>	<b>Container Security Initiative</b>
15	<b>CSPD</b>	<b>Cargo System Program Directorate</b>
16	<b>CTR</b>	<b>Counter-Terrorism Response (Officers/Team)</b>
17	<b>C-TPAT</b>	<b>Customs-Trade Partnership Against Terrorism</b>

### **D**

19	<b>DA&amp;E</b>	<b>Design Analysis and Engineering</b>
20	<b>DBT</b>	<b>Design Base Threat</b>
21	<b>DFO</b>	<b>Director, Field Operations</b>
22	<b>DHS</b>	<b>Department of Homeland Security</b>
23	<b>DMD</b>	<b>Diamond</b>
24	<b>DNDO</b>	<b>Domestic Nuclear Detection Office</b>
25	<b>DOJ</b>	<b>Department of Justice</b>
26	<b>DOR</b>	<b>Department of Revenue</b>



**U.S. Customs and  
Border Protection**

1	<b>DOT</b>	<b>Department of Transportation</b>
2	<b>DS</b>	<b>Design Standard</b>
3	<b>DWV</b>	<b>Drain, Waste, Vent</b>
4	<b>E</b>	
5	<b>E/G</b>	<b>Engine Generator</b>
6	<b>EAC</b>	<b>Executive Assistant Commissioner</b>
7	<b>EES</b>	<b>Earth Electrode System</b>
8	<b>EIA/TIA</b>	<b>Electronic Industry Alliance/Telecommunications Industry Alliance</b>
9	<b>EIFS</b>	<b>Exterior Insulation and Finishing System</b>
10	<b>EPA</b>	<b>Environmental Protection Agency</b>
11	<b>ES</b>	<b>Enterprise Services</b>
12	<b>F</b>	
13	<b>FF&amp;E</b>	<b>Furniture, Fixtures, and Equipment</b>
14	<b>FM&amp;E</b>	<b>Facilities Management and Engineering</b>
15	<b>FAR</b>	<b>Federal Acquisition Regulation</b>
16	<b>FAS</b>	<b>Federal Acquisition Services</b>
17	<b>FC</b>	<b>Foot-candle</b>
18	<b>FDA</b>	<b>U.S. Food and Drug Administration</b>
19	<b>FDAU</b>	<b>Fraudulent Document Analysis Unit</b>
20	<b>FDAUR</b>	<b>Fraudulent Document Analysis Unit Room</b>
21	<b>FEMA</b>	<b>Federal Emergency Management Agency</b>
22	<b>FFR</b>	<b>Field Facility Request</b>
23	<b>FHWA</b>	<b>Federal Highway Administration</b>
24	<b>FICAM</b>	<b>Federal Identity, Credential, and Access</b>
25	<b>FIPS</b>	<b>Federal Information Processing Standard</b>
26	<b>FIS</b>	<b>Federal Inspection Service</b>



## U.S. Customs and Border Protection

1	<b>FMCSA</b>	<b>Federal Motor Carrier Safety Administration</b>
2	<b>FM&amp;E</b>	<b>Facilities Management and Engineering Directorate</b>
3	<b>FOA</b>	<b>Fiber Optic Association</b>
4	<b>FOF</b>	<b>Field Operations Facilities</b>
5	<b>FOF PMO</b>	<b>Field Operations Facilities Program Management Office</b>
6	<b>FOF PMO PM</b>	<b>Field Operations Facilities, Program Management Office Project Manager</b>
7	<b>FPE</b>	<b>Fire Protection Engineer</b>
8	<b>FPT</b>	<b>Functional Performance Test</b>
9	<b>FRP</b>	<b>Fiber-Reinforced Plastic/Polymer</b>
10	<b>FRT</b>	<b>Fire Retardant Treated</b>
11	<b>FSC</b>	<b>Facility Security Committee</b>
12	<b>FSC</b>	<b>Forest Stewardship Council</b>
13	<b>FSL</b>	<b>Facility Security Level</b>
14	<b>FST</b>	<b>Fuel Storage Tank</b>
15	<b>FTZ</b>	<b>Free Trade Zones</b>
16	<b>FWS</b>	<b>Fish and Wildlife Service</b>
17	<b>G</b>	
18	<b>GFCI</b>	<b>Ground Fault Circuit Interrupter</b>
19	<b>GFE</b>	<b>Government Furnished Equipment</b>
20	<b>GGBFS</b>	<b>Ground Granulated Blast Furnace Slag</b>
21	<b>GOV</b>	<b>Government Owned Vehicle</b>
22	<b>GSA</b>	<b>U.S. General Services Administration</b>
23	<b>GWB</b>	<b>Gypsum Wall Board</b>
24	<b>H</b>	
25	<b>HAZMAT</b>	<b>Hazardous Material</b>
26	<b>HEPA</b>	<b>High Efficiency Particulate Air</b>



## U.S. Customs and Border Protection

1	<b>HQ</b>	<b>Headquarters</b>
2	<b>HSPD</b>	<b>Homeland Security Presidential Directive</b>
3	<b>HVAC</b>	<b>Heating, Ventilation, and Air Conditioning</b>
4	<b>I, J, &amp; K</b>	
5	<b>IAPMO</b>	<b>International Association of Plumbing and Mechanical Officials</b>
6	<b>IBC</b>	<b>International Building Code</b>
7	<b>ICAO</b>	<b>International Civil Aviation Organization</b>
8	<b>ICC</b>	<b>International Code Council</b>
9	<b>ICE</b>	<b>U.S. Immigration and Customs Enforcement</b>
10	<b>ICS</b>	<b>Intercommunication Subsystem</b>
11	<b>ICSS</b>	<b>Interagency Committee on Seismic Safety in Construction</b>
12	<b>ID</b>	<b>Inside Diameter</b>
13	<b>IDF</b>	<b>Intermediate Distribution Frame</b>
14	<b>IDS</b>	<b>Intrusion Detection System</b>
15	<b>IECC</b>	<b>International Energy Conservation Code</b>
16	<b>IEE</b>	<b>Institute of Electrical and Electronics Engineers</b>
17	<b>IES</b>	<b>Illuminating Engineering Society</b>
18	<b>IESNA</b>	<b>Illuminating Engineering Society, North America</b>
19	<b>IFC</b>	<b>International Fire Code</b>
20	<b>IFGC</b>	<b>International Fuel Gas Code</b>
21	<b>IFS</b>	<b>International Fiber Systems</b>
22	<b>ILB</b>	<b>Integrated Logistics Branch</b>
23	<b>IMC</b>	<b>International Mechanical Code</b>
24	<b>IPI</b>	<b>Invisibly Embedded Information (Invisible Personal Information)</b>
25	<b>IT</b>	<b>Information Technology</b>
26	<b>ITB</b>	<b>Interdiction Technology Branch</b>



**U.S. Customs and  
Border Protection**

1	<b>L</b>	
2	<b>LAN</b>	<b>Local Area Network</b>
3	<b>LBI</b>	<b>Land Border Integration</b>
4	<b>LCD</b>	<b>Liquid Crystal Display</b>
5	<b>LDD</b>	<b>Luminaire Dirt Deprecation</b>
6	<b>LEC</b>	<b>Local Exchange Company</b>
7	<b>LEED</b>	<b>Leadership in Energy and Environmental Design</b>
8	<b>LED</b>	<b>Light Emitting Diodes</b>
9	<b>LLD</b>	<b>Lamp Lumen Deprecation</b>
10	<b>LPOE</b>	<b>CBP Land Port of Entry</b>
11	<b>LPS</b>	<b>Lighting Protection System</b>
12	<b>LWD</b>	<b>Long Way of Design</b>
13	<b>M</b>	
14	<b>mm</b>	<b>Millimeters</b>
15	<b>MAC</b>	<b>Media Access Point</b>
16	<b>MAR</b>	<b>Megacenter Alarm Requirements</b>
17	<b>MBMA</b>	<b>Metal Building Manufacturer's Association</b>
18	<b>MDF</b>	<b>Main Distribution Frame</b>
19	<b>MDPC</b>	<b>Main Critical Distribution Panel</b>
20	<b>MDPN</b>	<b>Main Distribution Panel</b>
21	<b>MEDP</b>	<b>Main Essential Distribution Panel</b>
22	<b>MEP</b>	<b>Mechanical Electrical Plumbing</b>
23	<b>MNPT</b>	<b>Male National Pipe Thread</b>
24	<b>MPI</b>	<b>Master Painters Institute</b>
25	<b>MPOE</b>	<b>Main Point of Entry</b>
26	<b>MSD</b>	<b>Mission Support Director</b>

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## U.S. Customs and Border Protection

1	<b>MUTCD</b>	<b>Manual on Uniform Traffic Control Devices</b>
2	<b>MVSS</b>	<b>Mobile Video Surveillance Systems</b>
3	<b>N</b>	
4	<b>NA&amp;E</b>	<b>Network Architecture and Engineering</b>
5	<b>NASF</b>	<b>Net Assignable Square Feet</b>
6	<b>NEC</b>	<b>National Electric Code</b>
7	<b>NEEMA</b>	<b>National Electrical Manufacturers Association</b>
8	<b>NEPA</b>	<b>National Environmental Protection Act</b>
9	<b>NFPA</b>	<b>National Fire Protection Association</b>
10	<b>NII</b>	<b>Non-Intrusive Inspections</b>
11	<b>NPDES</b>	<b>National Pollutant Discharge Elimination</b>
12	<b>NRCA</b>	<b>National Roofing Contractors Association</b>
13	<b>NRH</b>	<b>Non-Removable Hinge</b>
14	<b>NSF</b>	<b>Net Square Feet</b>
15	<b>NTC-C</b>	<b>National Targeting Center – Cargo</b>
16	<b>NVR</b>	<b>Network Video Recorder</b>
17	<b>NWWDA</b>	<b>National Wood, Window, and Door Association</b>
18	<b>O</b>	
19	<b>OA</b>	<b>Office of Administration</b>
20	<b>OBIM</b>	<b>Office of Biometric Identity Management</b>
21	<b>OCC</b>	<b>Office of Chief Counsel</b>
22	<b>OCR</b>	<b>Optical Character Reader</b>
23	<b>OILL</b>	<b>Office of Intelligence and Investigative Liaison</b>
24	<b>OFO</b>	<b>Office of Field Operations</b>
25	<b>OGA</b>	<b>Other Government Agencies</b>
26	<b>OIC</b>	<b>Officer in Charge</b>



**U.S. Customs and  
Border Protection**

1	<b>OIT</b>	<b>Office of Information Technology</b>
2	<b>OPA</b>	<b>Office of Public Affairs</b>
3	<b>OPR</b>	<b>Office of Professional Responsibility</b>
4	<b>OSHA</b>	<b>Occupational Safety and Health</b>
5	<b>OTDR</b>	<b>Optical Time-Domain Reflectometer</b>
6	<b>P &amp; Q</b>	
7	<b>PCA</b>	<b>Portland Cement Association</b>
8	<b>PCBs</b>	<b>Polychlorinated Biphenyls</b>
9	<b>PD</b>	<b>Port Director</b>
10	<b>PG&amp;D</b>	<b>CBP Printing, Graphics and Distribution</b>
11	<b>PgM</b>	<b>Program Manager</b>
12	<b>PHS</b>	<b>U.S. Public Health Service</b>
13	<b>PIV</b>	<b>Personal Identity Verification</b>
14	<b>PM</b>	<b>Project Manager</b>
15	<b>PMO</b>	<b>Program Management Office</b>
16	<b>POC</b>	<b>Point-of-Contact</b>
17	<b>POE</b>	<b>Port of Entry</b>
18	<b>POP</b>	<b>Point of Presence</b>
19	<b>POR</b>	<b>Program of Requirements</b>
20	<b>PPQ</b>	<b>Plant Protection Quarantine</b>
21	<b>PRUA</b>	<b>Project Requirements Understanding Acknowledgement</b>
22	<b>PSOB</b>	<b>Physical Security Operations Branch</b>
23	<b>PSS</b>	<b>Physical Security System</b>
24	<b>PTZ</b>	<b>Pan, Tilt, Zoom (associated with CCTV security system)</b>
25	<b>PVMQ</b>	<b>Physical Verification of Manifested Quantities</b>



## U.S. Customs and Border Protection

1	<b>Q</b>	
2	<b>QMI</b>	<b>Quarantine Materials Interception</b>
3	<b>R</b>	
4	<b>RCRA</b>	<b>Resource Conservation and Recovery Act</b>
5	<b>RDE</b>	<b>Radiation Detection Equipment</b>
6	<b>RF</b>	<b>Radio Frequency</b>
7	<b>RFID</b>	<b>Radio Frequency Identification</b>
8	<b>RFP</b>	<b>Request for Proposal</b>
9	<b>RMOA</b>	<b>Reimbursement Memorandum of Agreement</b>
10	<b>RIID</b>	<b>Radioactive Isotope Identification Device</b>
11	<b>RPM</b>	<b>Radiation Portal Monitor</b>
12	<b>RPM</b>	<b>Revolutions per Minute</b>
13	<b>RTD</b>	<b>Resistance temperature detector</b>
14	<b>RVSS</b>	<b>Remote Video Surveillance System</b>
15	<b>S</b>	
16	<b>SCI</b>	<b>Steel Deck Institute</b>
17	<b>SE</b>	<b>Structural Engineer</b>
18	<b>SF</b>	<b>Square Feet</b>
19	<b>SFI</b>	<b>Secure Freight Initiative</b>
20	<b>SHPO</b>	<b>State Historic Preservation Office</b>
21	<b>SIC</b>	<b>Security Interface Cabinet</b>
22	<b>SJI</b>	<b>Steel Joist Institute</b>
23	<b>SMACNA</b>	<b>Sheet Metal and Air Conditioning Contractors' National Association</b>
24	<b>SMD</b>	<b>Security Management Division</b>
25	<b>SOW</b>	<b>Statement of Work</b>
26	<b>SPD</b>	<b>Special Power Distribution</b>





**U.S. Customs and  
Border Protection**

1	<b>SPPH</b>	<b>CBP Security Policy and Procedures Handbook, 1400-2B</b>
2	<b>SRA</b>	<b>Strategic Resource Assessment</b>
3	<b>SRI</b>	<b>Solar Reflective Index</b>
4	<b>SSID</b>	<b>Service Set Identifier</b>
5	<b>STC</b>	<b>Sound Transmission Coefficient</b>
6	<b>STE</b>	<b>Secure Terminal Equipment</b>
7	<b>SWD</b>	<b>Short Way of Design</b>
8	<b>T</b>	
9	<b>TAB</b>	<b>Testing, Adjusting, and Balancing</b>
10	<b>TACCOM</b>	<b>Tactical Communications</b>
11	<b>TCA</b>	<b>Tile Council of America</b>
12	<b>TFT</b>	<b>Thin-Film Transistor</b>
13	<b>TLC</b>	<b>Traffic Light Controller</b>
14	<b>TSA</b>	<b>Transportation Security Administration</b>
15	<b>Telco</b>	<b>Telecommunications</b>
16	<b>TSCA</b>	<b>Toxic Substances Control Act</b>
17	<b>TVSS</b>	<b>Transit Voltage Surge Suppression</b>
18	<b>U</b>	
19	<b>UL</b>	<b>Underwriters Laboratories</b>
20	<b>UGS</b>	<b>Unattended Ground Sensors</b>
21	<b>UPS</b>	<b>Uninterrupted Power Supply</b>
22	<b>U.S.</b>	<b>United States</b>
23	<b>USCS</b>	<b>U.S. Customs Service</b>
24	<b>USACE</b>	<b>United States Army Corps of Engineers</b>
25	<b>USBP</b>	<b>U.S. Border Patrol</b>
26	<b>USCG</b>	<b>United States Coast Guard</b>



## U.S. Customs and Border Protection

1	<b>USDA</b>	<b>United States Department of Agriculture</b>
2	<b>USG</b>	<b>United States Government</b>
3	<b>USPASS</b>	<b>U.S. Passenger Accelerated Service System</b>
4	<b>US-VISIT</b>	<b>United States Visitor and Immigrant Status Indicator Technology</b>
5	<b>UTP</b>	<b>Unshielded Twisted Pair</b>
6	<b>UV-A</b>	<b>Ultraviolet – A</b>

### **V**

8	<b>VAC</b>	<b>Volts Alternating Current</b>
9	<b>VCT</b>	<b>Vinyl Composite Tile</b>
10	<b>VE</b>	<b>Value Engineering</b>
11	<b>VOC</b>	<b>Volatile Organic Compound</b>
12	<b>VS</b>	<b>Veterinary Services</b>
13	<b>VSC</b>	<b>Video</b>

### **W**

15	<b>WAN</b>	<b>Wide Area Network</b>
16	<b>WHTI</b>	<b>Western Hemisphere Travel Initiative</b>

### **A.2 ABBREVIATIONS**

18	<b>ABS</b>	<b>Acrylonitrile Butadiene Styrene</b>
19	<b>BMS</b>	<b>Balanced Magnetic Switch</b>
20	<b>BR</b>	<b>Bullet Resistant</b>
21	<b>BRD</b>	<b>Board</b>
22	<b>CAB</b>	<b>Cabinet</b>
23	<b>CFM</b>	<b>Cubic Feet per Minute</b>
24	<b>CLG</b>	<b>Ceiling</b>
25	<b>CONF</b>	<b>Conference</b>
26	<b>DB</b>	<b>Dry Bulb</b>

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## U.S. Customs and Border Protection

1	<b>DETN</b>	<b>Detention</b>
2	<b>DIA</b>	<b>Diameter</b>
3	<b>DPS</b>	<b>Door Position Switch</b>
4	<b>DPT</b>	<b>Depth</b>
5	<b>DR</b>	<b>Door</b>
6	<b>DTN</b>	<b>Detention</b>
7	<b>DWG</b>	<b>Drawing</b>
8	<b>DWR</b>	<b>Drawer</b>
9	<b>EA</b>	<b>Each</b>
10	<b>EQ</b>	<b>Equal</b>
11	<b>EQUIP</b>	<b>Equipment</b>
12	<b>FCT</b>	<b>Function</b>
13	<b>FLR</b>	<b>Floor</b>
14	<b>FPM</b>	<b>Feet per Minute</b>
15	<b>FT</b>	<b>Foot</b>
16	<b>Ga</b>	<b>Gauge</b>
17	<b>GLZ'G</b>	<b>Glazing</b>
18	<b>GPM</b>	<b>Gallons per Minute</b>
19	<b>GYP BD</b>	<b>Gypsum Board</b>
20	<b>GWB</b>	<b>Gypsum Wall Board</b>
21	<b>FEU</b>	<b>Forty-Foot Equivalent</b>
22	<b>H-D</b>	<b>Heavy-Duty</b>
23	<b>HET</b>	<b>High Efficiency Toilet</b>
24	<b>HGT</b>	<b>Height</b>
25	<b>IN</b>	<b>Inches</b>
26	<b>INSUL</b>	<b>Insulation</b>



## U.S. Customs and Border Protection

1	<b>LAM</b>	<b>Laminate</b>
2	<b>L</b>	<b>Length</b>
3	<b>MAX</b>	<b>Maximum</b>
4	<b>MIN</b>	<b>Minimum</b>
5	<b>MNPT</b>	<b>Male National Pipe Thread</b>
6	<b>MTL</b>	<b>Metal</b>
7	<b>MTD</b>	<b>Mounted</b>
8	<b>NPT</b>	<b>National Pipe Taper</b>
9	<b>O.C.</b>	<b>On Center</b>
10	<b>OPG</b>	<b>Opening</b>
11	<b>OPT</b>	<b>Optional</b>
12	<b>psf</b>	<b>Pounds per square foot</b>
13	<b>psi</b>	<b>Pounds per square inch</b>
14	<b>RC</b>	<b>Resilient Channel</b>
15	<b>REV</b>	<b>Revision</b>
16	<b>RH</b>	<b>Relative humidity</b>
17	<b>RM</b>	<b>Room</b>
18	<b>RQMTS</b>	<b>Requirements</b>
19	<b>SEC</b>	<b>Security</b>
20	<b>SQ</b>	<b>Square</b>
21	<b>SQ FT</b>	<b>Square Feet</b>
22	<b>SST</b>	<b>Stainless Steel</b>
23	<b>STOR</b>	<b>Storage</b>
24	<b>STL</b>	<b>Steel</b>
25	<b>TEU</b>	<b>Twenty-Foot Equivalent</b>
26	<b>TEMP</b>	<b>Tempered</b>



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1	<b>THK</b>	<b>Thick/Thickness</b>
2	<b>VCT</b>	<b>Vinyl Composition Tile</b>
3	<b>W/</b>	<b>With</b>
4	<b>WD</b>	<b>Width</b>
5	<b>WIN</b>	<b>Window</b>

### A.3 GLOSSARY

The following are terms used within this Standard as well as in the design and operation of cargo facilities:

**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.



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- 1 **Design-Bid-Build** — Traditional construction project delivery system has separate contracts, including the  
2 contracts are the design performed by the A/E and the construction (bid-build) by the general contractor.
- 3 **Design-Build** — Abbreviated D - B or D / B, this is a construction industry project delivery system. This method  
4 contracts the design and construction services as a single entity. This is known as the design-builder or design-  
5 build contractor. In contrast to "design-bid-build", D -B relies on a single point of responsibility contract to  
6 reduce the delivery schedule. It overlaps the design phase and construction phase of a project.
- 7 **Federal Government** — The U.S. Government and all federal agencies and agents representing these agencies.
- 8 **Gantry Crane** — A track-mounted, shoreside crane that loads and unloads breakbulk cargo, containers, and  
9 heavy lift cargo.
- 10 **International Building Code** — A set of model standards issued by BOCA International, Inc., that protects  
11 building occupant health and safety.
- 12 **Renovation, Major** — Renovation that requires the CFO or transportation line to comply with CBP's CFDS in  
13 the areas affected by the renovation. A major renovation is one that impacts processing areas, office space,  
14 and/or CBP operations. Renovation areas that affect CBP operations would require the CFO or transportation  
15 line to comply with the current CBP CFDS. A major renovation to one part of the CBP sterile area, though  
16 requiring compliance with the current CBP CFDS in the area to which renovations are made, may not  
17 necessarily require renovations/compliance with other parts of the CBP sterile area not affected by the major  
18 renovation. For example, if the CBP processing booths renovation requires that it comply with the current CBP  
19 CFDS, CBP may not require the CFO or transportation line to renovate the CBP operational support office area  
20 to comply with the current CBP CFDS.
- 21 **Renovation, Minor** — Renovation in the CBP area that does not appreciably affect processing areas, office space,  
22 or CBP operations. For example, modifications of the sterile corridor system or gate areas may fit the definition  
23 of a minor renovation. This modification would not require compliance with the CBP's present CFDS, except for  
24 the affected area, unless the passenger capacity is increased.
- 25 **Stevedore** — Labor management companies that provide equipment and hire workers to transfer cargo between  
26 ships and docks. Stevedore companies may also serve as terminal operators.

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# SIGNAGE REQUIREMENTS

Cargo Facilities Design Standard

2019 (Draft)



U.S. Customs and  
Border Protection

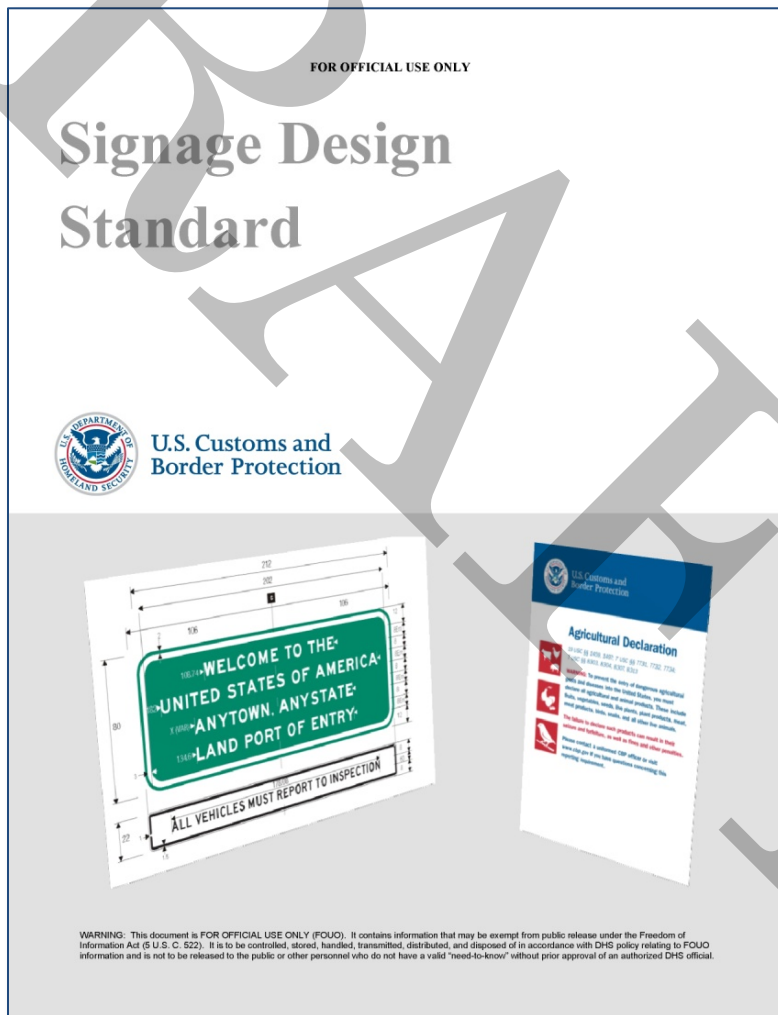




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**APPENDIX B. SIGNAGE**  
**B.1 INTRODUCTION**

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.



11

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# SUBMITTAL REQUIREMENTS

## Cargo Facilities Design Standard 2019 (Draft)



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1 APPENDIX C - SUBMITTAL REQUIREMENTS

2 C.1 INTRODUCTION

3 Project design features require appropriate review and approval by U.S. Customs and Border Protection (CBP)  
4 and other relevant stakeholders. The submission requirements listed here apply to projects where design  
5 services are performed by architects and engineers (A/Es) for new construction or renovation projects.

6 These requirements are the minimum standards. The A/E's scope of work takes precedence on each project. In  
7 each phase of work, project documents are submitted to CBP in electronic and hard copy format, through the  
8 port director (PD) until the Field Operations Facilities, Program Management Office Project Manager (FOF  
9 PMO PM) is assigned.

10 Due to the complexity and difference in project requirements, the submittals provided for each project in this  
11 section are not equally applicable to each project's discipline or stakeholder. Appendix C requirements were  
12 developed for cargo facility projects. This section should be viewed as a general guideline for the A/E to ensure  
13 consistency in the design approach. It should create a well-documented and integrated project development  
14 process to facilitate CBP design submittal reviews.

15 The U.S. Government assumes full ownership/occupancy. Cargo facilities are free space, developed by the cargo  
16 port operator (CPO). Cargo facility project requirements are based on this appendix. The following are general  
17 notes for this process.

- 18 1. Drawings, specifications, turnover documents, design narratives, and quality review sections, noted  
19 below, are applicable to cargo facility projects.
- 20 2. Cost estimates/budgets are limited to the equipment, utilities, and facilities and space for CBP  
21 operations. Energy analysis requirements vary, per the project scope.
- 22 3. For new or renovation construction submittals, refer to this Standard, C.7(1) New Construction  
23 Submittals. Submittals may be truncated in scope, with two design phases condensed into one.
- 24 4. Drawings are limited to the requirements of the statement of work (SOW), and include the following:
  - 25 • An overall site plan, showing the relationship of CBP and non-CBP spaces, including CBP employee  
26 parking
  - 27 • Plans, sections, elevations, and details of the CBP spaces
- 28 5. Narratives should discuss the relationship of building systems, serving the CBP spaces, to the whole  
29 building. For example, some spaces will require dedicated heating, ventilation, and air conditioning  
30 (HVAC) systems; the fire protection system typically serves the whole building.
- 31 6. Value engineering (VE) reports may not be required.
- 32 7. Construction phase submittals include all items noted (as applicable) to the projects.
- 33 8. CBP acceptance/occupancy phase submittals include all items noted



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### 39 C.2 . DRAWINGS

#### 40 C.2.1 Lettering

41 Lettering on drawings is legible when drawings are reduced to half-size, and in electronic format. This applies  
42 to concept and design development drawings and construction documents. Text/font size is 1/8" height (HGT);  
43 nine-point text is the accepted lower limit for lettering on full-size drawings.

#### 44 C.2.2 Drawing Scale

45 Drawings are created at full scale (model) and plotted at a selected scale. Drawings include numeric scales.  
46 Graphic scales are preferred for site plans. The scale selected is appropriate for high resolution; it offers  
47 legibility on reduced copies (i.e., half-sized sets).

48 Architectural floor plans use English units and contain English scales, so that spatial data management  
49 coordinators can reconcile the drawings with the program requirements.

50 A north arrow is included on all site drawings and plan view drawings.

#### 51 C.2.3 Drawing Index

52 Each submittal includes an index of all drawings. This index includes revision versions of the drawings, if  
53 changes were made. If the drawing set includes more than one volume, each volume has a drawing index of the  
54 entire set.

#### 55 C.2.4 Seals

56 Each sheet of the construction document set bears the responsible design professional's seal and signature.  
57 Electronically produced documents may have digital signatures and seals.

#### 58 C.2.5 Cover Sheet

59 The A/Es of each discipline of record provide a code certification statement for compliance with specified codes  
60 and standards; the professional's seal and signature are on the cover sheet. The date of the submittal and  
61 percentage of completion is included. For extensive projects, a separate code analysis documentation sheet may  
62 be provided.

#### 63 C.2.6 Document Security Requirements

64 All "For Official Use Only" (FOUO) documentation, including drawings, specifications, construction documents,  
65 and planning materials, are handled, per the CBP Office of Professional Responsibility (OPR) Security Policy  
66 and Procedures Handbook, HB 1400-02B (SPPH), August 13, 2009 or current edition and amendment(s).

67 Within the electronic or printed document, pages containing FOUO building information have the following  
68 mark imprinted or affixed:

69       WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be  
70       exempt from public release under the Freedom of Information Act (5 U.S.C. § 552). It is to be controlled,  
71       stored, handled, transmitted, distributed, and disposed of in accordance with DHS policy relating to FOUO



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72 information and is not to be released to the public or other personnel who do not have a valid “need-to-know”  
73 without prior approval of an authorized DHS official.

74 This mark may not be removed or covered in any way. The FOUO markings are used, regardless of the medium  
75 through which the information appears or is conveyed.

76 The construction drawings, plans, and specifications are disseminated only to parties with a valid need-to-know,  
77 per CBP OPR document handling requirements.

### 78 C.3 SPECIFICATIONS

#### 79 C.3.1 Format

80 Specifications are produced, according to the Construction Specification Institute (CSI) MasterFormat divisions,  
81 and include the following:

- 82 • Numbers on each page.
- 83 • Binding and a table of contents.
- 84 • Instructions to bidders.

#### 85 C.3.2 Editing of Specifications

86 The A/E edits the specification sections, including government-furnished guide sections, to reflect the project  
87 design intent, CBP requirements, and federal law. Technical specifications are coordinated with the drawings.  
88 Specification language, not applicable to the project, is deleted.

### 89 C.4 TURNOVER DOCUMENTS

90 Electronic and hard copy documentation on building systems is provided. This provides guidance to the building  
91 engineering staff; it assists long-term asset management. The documents show installed elements, their testing  
92 performance, and system operation in the completed facility, including but not limited to:

- 93 • Contractor “redline” (corrected marked-up drawings) as-built drawings and specifications, per the  
94 construction contract, including:
  - 95 • Building/site actual measurements.
  - 96 • Changes to details.
  - 97 • As-built panel schedules, etc.
- 98 • The A/E’s final “record” drawings, including the final changes to the design, and contractor noted as-  
99 built conditions.
  - 100 • Operating and maintenance manuals for each installed system, including major component  
101 information, schematic diagrams, sequence of operations, and system operating criteria. The  
102 minimum standard for custom-written operating manuals should be an MS Word document.
  - 103 • Training materials and videos.



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104 Asset data and documentation, including engineering calculations, record drawing information, and visual  
 105 media. This is provided to document the configuration, engineering assumptions, actual material/sizes installed.  
 106 This ensures future maintenance, repairs, and improvements are addressed.

107 Prior to acceptance for substantial completion, or beneficial occupancy, the FOF PMO PM verifies required  
 108 submittals and deliverables as “received and complete,” including:

- 109 ● Designs, as-built drawings, and record drawings.
- 110 ● Fabrication submittals and shop drawings, including but not limited to:
  - 111 ● Equipment schedules.
  - 112 ● Equipment (or other) data sheets, product literature; the minimum standard should be PDF  
 113 submission (allow for regional supplementation).
  - 114 ● Equipment inventories, testing, adjusting, and balancing (TAB) reports.
  - 115 ● Building automation systems (BAS) point and device data identification electronic data tables,  
 116 including point numbers, device ID numbers, network numbers, English-language descriptions,  
 117 location information, etc.
  - 118 ● Test records demonstrating successful systems and equipment test results.
  - 119 ● Calculations including energy, structural, lighting, fire alarm system voltage drops, battery  
 120 requirements, fire sprinkler hydraulics, and security.
  - 121 ● Commissioning functional performance test (FPT) results, in an electronic data table format (Excel  
 122 or Access files). This includes information mentioned in the specifications fields.

123 Electronic media is in latest desktop media versions and optimum file sizes, including Acrobat “pdf” format,  
 124 Microsoft, CAD “dwg” format, video media, electronic photo “.jpg” format, and Webcam archive data. Electronic  
 125 data is provided to the FOF PMO PM on a CD-ROM, unless otherwise specified. Contractors provide backup  
 126 CDs for the installed equipment software, including files to reinstall user and programming data and the  
 127 manuals and files produced for the specific installation.

128 At project completion, the A/E Specification Section 01781, Project Record Documents, are edited to reflect  
 129 electronic final submittals and data, as noted above.

### 130 C.5 DESIGN NARRATIVES AND CALCULATIONS

#### 131 C.5.1 Format

132 Typed, bound narratives are produced for each design discipline.

#### 133 C.5.2 Content

134 Narratives explain the design intent and document decisions made during the design process; they are an  
 135 important permanent record of the building design. Drawings and specifications are a record of which systems,  
 136 materials, and components the building contains; narratives should record why they were chosen. The narrative  
 137 of each submittal may be based on the previous submittal, but it is revised and expanded at each stage to reflect  
 138 the current design state.



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### 139 C.5.3 Calculations

140 Manual and/or computer-based calculations accompany narratives, per technical analysis support. Each set of  
 141 calculations should start with a summary sheet; this shows assumptions, references applicable codes and  
 142 standards, and lists the conclusions. Calculations should include engineering sketches to ensure a better  
 143 reviewer understanding. The calculations for each submittal should be cumulative, so that the final submittal  
 144 contains the project calculations. Calculations submitted, at the early stages of the project, are revised later to  
 145 reflect the final design. Engineering calculations (i.e., number and sizes of re-bars used in reinforced concrete  
 146 members) refer to codes, standards, the referenced paragraph of a code and/or text book and refer to the drawing  
 147 number.

### 148 C.6 DESIGN QUALITY REVIEWS

149 At the end of each design phase, the A/E submits the completed design documents to the FOF PMO PM for  
 150 review, comments, and approvals by the Design Analysis and Engineering (DA&E) section. These submittals  
 151 include, but are not limited to a design review checklist, drawings, specifications, and design narratives. These  
 152 submittals may be delivered electronically, per the FOF PMO PM agreement (on a case-by-case basis). The  
 153 DA&E and other stakeholders will review submittals for:

- 154 ● Conformance with criteria.
- 155 ● Building and systems performance.
- 156 ● Efficient and effective design.
- 157 ● Identified risk factors for successful execution.
- 158 ● Applications of best practices.
- 159 ● Cost drivers.
- 160 ● Customer satisfaction.
- 161 ● Indicators of overall project suitability and readiness to move to the next phase in execution.

162 The FOF PMO verifies that the submittals comply with this Cargo Facility Design Standard (CFDS), referred  
 163 to as this Standard. Upon conclusion of the design review process, all review comments are compiled and verified  
 164 by the FOF PMO PM. The comments/responses to the comments clearly explain design deficiencies and the  
 165 required modifications, incorporated into future submittals. With each design phase, the A/E submits responses  
 166 to the design review comment log, indicating how the comment was addressed.

### 167 C.7 CONSTRUCTION PROJECT SUBMITTALS

168 Submittal requirements differ for new construction and renovation projects. For definitions of these project  
 169 types, refer to this Standard, Chapter 2, Cargo Facilities Planning and Programming.

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171

**Table C.-1. Project Submittals**

172

**1. Pre-Design and Programming Phase**

OVERVIEW	ANTICIPATED SUBMITTALS
<p>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.</p>	<ul style="list-style-type: none"> <li>• Project requirements understanding acknowledgement (PRUA).</li> <li>• Blocking/stacking diagrams.</li> <li>• Facility long-term master plan.</li> <li>• Waiver/deviation approvals.</li> <li>• Preliminary concept narrative.</li> <li>• Preliminary concept drawings.</li> <li>• The NEPA documentation.</li> <li>• Site survey.</li> </ul>

173

**2. Schematic Design Phase (15% Design)**

OVERVIEW	ANTICIPATED SUBMITTALS
<p>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.</p>	<ul style="list-style-type: none"> <li>• Schematic design narratives.</li> <li>• Renderings/photos.</li> <li>• Calculations/code analysis.</li> <li>• Waiver/deviation approvals.</li> <li>• Schematic drawings include (at the minimum):                             <ul style="list-style-type: none"> <li>• Site layout.</li> <li>• Existing conditions (if applicable).</li> <li>• Floor plans.</li> <li>• Mechanical, electrical, utility, and special systems.</li> <li>• Other discipline drawings relevant to the project.</li> </ul> </li> <li>• Cost estimates.</li> <li>• Specifications title list, with applicable CSI format sections, per current CSI.</li> <li>• Design review forms.</li> <li>• Value engineering report.</li> </ul>





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174 **3. Bidding and Negotiation Phase (Design-Build)**

175 **4. Design Development Phase (30% Design)**

OVERVIEW	ANTICIPATED SUBMITTALS
<p>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.</p> <p>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.</p> <p>B. The drawings for this submission are presented in the format that is used in future construction documents development.</p> <p>C. Outline Specifications are in the current CSI MasterSpec format, including products selected for the project, general coordination, and execution requirements for each discipline.</p>	<ul style="list-style-type: none"> <li>● Design development narratives.</li> <li>● Calculations/code analysis.</li> <li>● Waiver/deviation approvals.</li> <li>● Design development drawings.</li> <li>● Cost estimates.</li> <li>● Design review forms.</li> <li>● Value engineering report.</li> <li>● Drawing package, as applicable for each discipline, includes:                             <ul style="list-style-type: none"> <li>● Cover sheet.</li> <li>● Drawing index.</li> <li>● General notes and symbol legend.</li> <li>● Demolition plans.</li> <li>● Site plan.</li> <li>● Floor plans.</li> <li>● Elevations.</li> <li>● Reflected ceiling plans.</li> <li>● Section details.</li> <li>● Finish schedule.</li> <li>● Detailed space layouts.</li> <li>● Equipment details.</li> <li>● Equipment schedules.</li> <li>● Riser and interconnect diagrams.</li> </ul> </li> <li>● Outline specifications</li> </ul>

176 **5. Construction Documents Phase (60% through Final Design)**

OVERVIEW	ANTICIPATED SUBMITTALS
<p>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.</p>	<ul style="list-style-type: none"> <li>● Updated building system narratives.</li> <li>● Updated calculations/code analysis.</li> <li>● Construction documents progress drawings.</li> <li>● Specifications.</li> <li>● Final drawings.</li> <li>● Design review forms.</li> <li>● Cost estimates.</li> </ul>



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OVERVIEW	ANTICIPATED SUBMITTALS
<p>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.</p> <p>B. Drawings should include further refinement for details introduced at the 30% submission stage, including coordinated cross-references with relevant disciplines.</p> <p>C. Upon completion of this phase, the construction contract documents are finalized, with all outstanding issues resolved.</p> <p>D. The complete specifications are coordinated with the drawing package and applicable disciplines.</p>	<ul style="list-style-type: none"> <li>Value engineering report.</li> </ul>

177 **6. Bidding and Negotiation – (Design – Bid – Build)**

OVERVIEW	ANTICIPATED SUBMITTALS
CPO	<ul style="list-style-type: none"> <li>Proceeds with the bidding and award for construction of the project, upon approval from the FOF PMO PM.</li> <li>Develops statement of work and solicitation documents, including the completed drawings, specifications, and instructions for bidders and the bid form.</li> <li>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.</li> </ul>
FOF PMO	Provides the OFAM program level oversight, coordination, and reporting functions.
A/E	During the bidding period, questions may arise. The A/E answers requests for information (RFIs) related to non-CBP requirements.
FOF PMO PM	<ul style="list-style-type: none"> <li>During the bidding period, questions may arise. The FOF PMO PM answers the RFIs related to CBP requirements.</li> </ul>



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	<ul style="list-style-type: none"> <li>● Notifies CBP stakeholders of the following items related to the AO’s construction contract award:                             <ul style="list-style-type: none"> <li>● Bidding / negotiating update.</li> <li>● Contract award update.</li> <li>● Construction phase kick-off meeting.</li> <li>● Construction schedule / milestones.</li> <li>● Site visit(s)/inspection(s).</li> </ul> </li> </ul>
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178 **7. Construction Phase**

OVERVIEW	ANTICIPATED SUBMITTALS
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.	<ul style="list-style-type: none"> <li>● Bid/award reports.<sup>1</sup></li> <li>● Baseline project schedule.</li> <li>● Baseline project budget.</li> <li>● Updated schedule / budget.</li> <li>● Milestone schedule.</li> <li>● Change requests/log.<sup>1</sup></li> <li>● Manufacturer submittals/shop drawings.</li> <li>● Punch list.</li> <li>● Cost estimates.</li> </ul>

179 **8. Acceptance**

OVERVIEW	ANTICIPATED SUBMITTALS
Coordination of substantial completion by the general contractor.	<ul style="list-style-type: none"> <li>● Applicable test reports.</li> <li>● Authority having jurisdiction (AHJ) certifications/certificate of occupancy.</li> <li>● The LEED certification<sup>2</sup>.</li> <li>● The corrected FOF PMO PM punch-list items.</li> </ul>

180 **9. Beneficial Occupancy and Project Close-Out**

OVERVIEW	ANTICIPATED SUBMITTALS
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	<ul style="list-style-type: none"> <li>● Project closeout schedule.</li> <li>● Equipment manuals and warranties.</li> <li>● As-built drawings.</li> <li>● The AHJ inspection.</li> </ul>

<sup>1</sup>Deviation from CBP-approved documentation must be reported to the FOF PMO PM

<sup>2</sup> If applicable



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<p>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.</p>	<ul style="list-style-type: none"> <li>• Commissioning plans.</li> <li>• Post-occupancy report/survey plan.</li> </ul>
--	--

181 **C.7.1 Application**

182 Definitions in this section only apply to new construction projects.

183 When alternate delivery methods, the LEED certification strategy or project ownership parameters apply, the  
 184 required submittals may be different from the items defined below. The A/E and general contractor engages  
 185 with the FOF PMO PM and service provider, at the earliest possible phase, to confirm the submittal  
 186 requirements.

187 **C.8 PRE-DESIGN AND PROGRAMMING PHASE**

188 **C.8.1 Blocking/Stacking Diagrams**

189 This submittal includes developed space program adjacencies and functional spaces. It demonstrates compliance  
 190 with CBP-approved requirements, the proposed project submission shows feasibility, from a zoning perspective,  
 191 and shows that the building(s) and access fit the site’s context. The building systems and envelope are defined  
 192 to evaluate the effectiveness and efficiency related to throughput, operation, safety, security, maintenance, and  
 193 energy consumption.

194 During conceptual design, concepts are presented to CBP; these preliminary concepts are for working level use.  
 195 They are not presentation documents. The number of concepts required are defined in the SOW or otherwise  
 196 determined by the A/E. They are developed to a level that allows selection of a concept, satisfying program  
 197 operation and budget goals. The A/E will refine and present the final concept.

198 **C.8.2 Facility Long Term Master Plan**

199 The long-term master plan parameters follow the requirements in this Standard, Chapter 2, Cargo Facilities  
 200 Planning and Programming. In coordination with the agency stakeholders, involved in the regional planning  
 201 for a new cruise terminal, a formal master plan is developed and submitted for approval, for each project. When  
 202 an existing master plan is active for a new construction project, an updated master plan is developed and  
 203 submitted for approval.

204 **C.8.3 Waiver/Deviation Approvals**

205 During the planning/programming phase, facility requirement deviations are documented and provided, with  
 206 the approved program of requirements (POR).

207 Deviations or waiver requests during the schematic design and design development phases, follow the change  
 208 request process defined in this Standard, Chapter 2, Cargo Facilities Planning and Programming. Deviations  
 209 are submitted, with appropriate justification, through the FOF PMO PM.

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### 210 C.8.4 Pre-design and Programming Phase (Conceptual) Narrative

211 The preliminary concept narrative includes:

212 Description of each architectural design scheme:

- 213 ● Organizational concept.
- 214 ● Expansion potential.
- 215 ● Advantages and disadvantages.
- 216 ● Building efficiency.
- 217 ● Energy considerations.
- 218 ● Mechanical system and strategy, complying with this Standard, Chapter 18, Mechanical.
- 219 ● Fire protection design considerations.
- 220 ● Security features and considerations.

#### 221 A. Lighting

- 222 ● Evaluate possible issues with port light emissions.

#### 223 B. Site Statement

- 224 ● Include a site statement describing existing site features and erosion conditions, climatic conditions,  
225 topography and drainage patterns, wetlands, locations of flood plains, surrounding buildings (style,  
226 scale), and circulation patterns around the site.

#### 227 C. Zoning and Code Restrictions

- 228 ● Local code restrictions.
- 229 ● Federal Highway Administration and Department of Transportation requirements.
- 230 ● Brief statement from each design team discipline member regarding the applicable code  
231 requirements related to site and occupancy use, including but not limited to, items such as the  
232 construction and occupancy group(s) classification, fire resistance requirements, and general egress  
233 requirements, by the fire protection engineer (FPE).

#### 234 D. Historical Preservation

- 235 ● Historic preservation considerations (if applicable).
- 236 ● Potential archeological artifacts.



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- 237 E. Existing Major Site Utilities
- 238 F. Fire Protection Design Considerations
- 239 G. Security Features and Considerations
- 240 H. Site Plan
- 241 I. Zoning and Code Restrictions
  - 242 ● Local zoning restrictions.
- 243 **C.8.5 Drawings – Pre-design and Programming Phase (Conceptual) Drawings**

244 Pre-design and programming drawings include, at a minimum:

245 **Table C.2. Pre-design and Programming Phase (Conceptual) Drawings**

PRELIMINARY CONCEPT DRAWINGS – ANTICIPATED SUBMITTALS	
<b>SITE LOCATION PLAN</b>	
Site location plan [at least 1.25 miles (two kilometers) around site], showing: <ul style="list-style-type: none"> <li>● Site relative to location of international border, major landmarks, urban development, major roads, irregular topography, and bodies of water.</li> <li>● Location of bus stations and other mass transit links.</li> <li>● Location of distinct land use types and districts in the vicinity of the site (e.g., historic districts, retail nodes, civic districts, etc.).</li> </ul>	
<b>EXISTING SITE PLAN</b>	
Existing site plan (at least 500'-0" around site), describing: <ul style="list-style-type: none"> <li>● Site boundaries, approximate topography, existing buildings, setbacks, and easements.</li> <li>● Indicate local zoning restrictions.</li> <li>● Climatic conditions, including path of the sun.</li> <li>● Description of flood plain issues.</li> <li>● Location of on-site and off-site utilities.</li> <li>● Natural landscape.</li> <li>● Pedestrian and vehicular circulation (include direction of traffic on adjoining streets).</li> <li>● Neighboring land uses, existing and planned.</li> <li>● International border and buffer zone.</li> <li>● Noise disruptions and visual obstacles from port boundary.</li> </ul>	
<b>SITE PLANS FOR EACH DESIGN SCHEME</b>	
<ul style="list-style-type: none"> <li>● Building location and massing.</li> <li>● Building expansion potential.</li> <li>● Inspection, parking, and service areas.</li> </ul>	



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PRELIMINARY CONCEPT DRAWINGS – ANTICIPATED SUBMITTALS
<ul style="list-style-type: none"> <li>• Description of local plans for the surrounding area, relation of each concept to those plans, and a summary of the local official’s recommendations.</li> <li>• Site access by cargo handlers, cargo vehicles, pedestrians, emergency and service vehicles, staff, and others.</li> </ul>
FLOOR PLANS
<p>Floor plans, showing at a minimum:</p> <ul style="list-style-type: none"> <li>• Entrances, lobbies, corridors, stairways, elevators, dock spaces, processing spaces, work areas, special spaces, and service spaces (with the principal spaces labeled).</li> <li>• Dimensions for critical clearances, such as vehicle access.</li> </ul>
BUILDING SECTIONS
<p>Building sections (as necessary), showing:</p> <ul style="list-style-type: none"> <li>• Floor-to-floor heights and other critical dimensions.</li> <li>• Labeling of important spaces.</li> <li>• Labeling of floor and roof elevations.</li> </ul>
PHOTOGRAPHS
<p>Minimum of six 8" x 10" photographs showing the site and elevations of existing buildings (or landscape, as applicable) surrounding the site.</p>
MASSING MODELS
<p>Massing models of each architectural design scheme on a common base. No fenestration should be provided at this design development phase.</p>

246 **C.8.6 Cost Estimates**

- 247 • Preliminary concept cost estimates verify that each design scheme can be constructed within the
- 248 project budget.
- 249 • Space program statement/reconciliation — provide in metric and imperial units.

250 **C.8.7 National Environmental Policy Act Documentation**

251 National Environmental Policy Act (NEPA) documentation conforms to the authorities and regulations  
 252 referenced in this Standard, Chapter 1, Introduction. Complete NEPA documentation is submitted, prior to  
 253 design development.

254 **C.8.8 Site Survey**

255 Site surveys are generally prepared for projects involving sitework. The survey may be contracted separately,  
 256 by CBP or the service provider, or it may be included in the A/E project scope. The guidelines given here apply  
 257 in either case. When CBP contracts for the survey directly, the A/E may be requested to review the survey’s  
 258 SOW. The A/E may recommend technical requirements modifications to suit the project site.

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259 Surveys are prepared and sealed by a surveyor, licensed in the state where the project is located. The criteria  
260 listed here is not absolute; it should be modified by the civil engineer (CE) to suit the project conditions.

261 Surveys contain:

262 A. Existing Features

- 263 • Show locations of permanent features, within limits of work, such as: buildings, structures, fences,  
264 walls, concrete slabs and foundations, above-ground tanks, cooling towers, transformers, sidewalks,  
265 steps, power and light poles, traffic control devices, manholes, fire hydrants, valves, culverts,  
266 headwalls, catch basins or inlets, property corner markers, benchmarks, etc.

267 B. International Landmarks

- 268 • Show landmark locations associated with the international border.

269 C. Adjacent Features

- 270 • Show the location of adjacent and bounding roads or streets and street curbs, within limits of work,  
271 including driveways and entrances.

272 D. Paving

- 273 • Show types of surfacing and limits.  
274 • Show public streets, right-of-way widths and centerlines.

275 E. Landscaping

- 276 • Show the location of trees, shrubs, and other plants, within limits of work. Show the tree caliper  
277 size, and dead trees.

278 F. Utility Locations

- 279 • Show the location of overhead telephone and power lines, within the limits of work, and their  
280 easements.  
281 • Based on existing records, show the location of underground utilities, such as gas, water, steam,  
282 chilled water, electric power, sanitary, storm and combined sewers, telephone, etc. Show the sizes  
283 of pipes inside diameter (I.D.), invert elevations, inlet, or manhole rim elevations. When appropriate,  
284 verify information in the field.

285 G. Storage Tanks or Subsurface Structures

286 Based on existing records, show the location of underground storage tanks and subsurface structures.

287 H. Topography

- 288 • Topography field criteria should include:





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- 289 ● Contour intervals at 1'-0" to 2'-0" (300 mm to 600 mm), plotted on a grid system, in relation to
- 290 the survey scale.
- 291 ● Elevations, at top and bottom of ditches, and at abrupt grade changes.
- 292 ● Top-of-curb and gutter elevations.
- 293 ● Street centerline elevations.
- 294 ● Elevations at permanent features, within the limits of work.
- 295 ● Ground floor elevations, for existing buildings.

296 I. Bearings and Distances for Property Lines Within the Limits of Work

297 J. Official Datum, Upon Which Elevations Are Based

298 K. The Benchmark, on or Adjacent to the Site, to be Used as a Starting Point

299 L. Official Datum, Upon Which Horizontal Control Points Are Based

- 300 ● Establish two permanent benchmarks on the site if they do not already exist. Provide adjacent key
- 301 data point elevations (and across the street from the project site) of the building structures and
- 302 improvements; provide the elevations that occur during the wet and dry season.

303 M. Flood Plain, Streams, or Other Water Sources

- 304 ● Delineate the location of wetlands, floodplains, underground streams, or water sources.

### 305 C.8.9 Geotechnical Report

306 The geotechnical report is available to contractors as a common basis for bids. The report would function as the  
307 basis for evaluating “changed conditions” or “differing site conditions,” during construction; therefore, it needs  
308 to have sufficient detail, including the number of borings, groundwater, and contamination evaluations. This  
309 support the design and mitigates “changed condition” issues.

## 310 C.9 SCHEMATIC DESIGN (15% DESIGN)

### 311 C.9.1 Schematic Design Narrative – (15% Design)

312 A design narrative is a required deliverable at each stage of the project. The schematic design narrative includes  
313 a preliminary description of the concept solution selected to achieve the design objective, design issues, and  
314 assumptions. The schematic design narrative includes field conditions potentially affecting the work. The  
315 deliverable demonstrates how the schematic design complies with CBP requirements, the approved POR, and  
316 applicable codes and regulations. In the schematic narrative, the A/E demonstrates applicable building code  
317 requirements and possible compliance issues and provides code analysis, addressing applicable disciplines. The  
318 schematic design narrative typically includes:

319 A. Overall Site Layout – (15% Design)

- 320 ● Description of site and landscape schematic design.
- 321 ● Demolition (if required).
- 322 ● 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
- 345 H. Structural – (15% Design)
- 346                   • 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.
- 347
- 348 I. Mechanical, Electrical, and Plumbing – (15% Design)
- 349                   Mechanical, Electrical, and Plumbing (MEP) submittals include:
- 350                   1. Mechanical
- 351                   • A written narrative, describing the selected mechanical systems and equipment, including:
- 352                   • Indoor and outdoor design conditions.



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- 353                   • Ventilation rates, dehumidification, and pressurization criteria.  
354                   • Equipment capacities, weights, sizes, and power requirements.  
355                   • Fuel and utility requirements.  
356                   • Code compliance statement.
- 357           2. Electrical
- 358                   • Utility requirements.  
359                   • Description of at least two potential electrical systems, including the lighting, lighting control  
360                   system, and a code compliance statement.
- 361           3. Plumbing
- 362                   • A description of proposed plumbing systems, including:
- 363                   • Domestic cold and hot water, sanitary and storm drainage, and irrigation.  
364                   • Evaluate alternate sources for preheating domestic water (solar or heat recovery).
- 365   **C.9.2 Waiver/Deviation Approvals**
- 366   Refer to chapter C8.3, Waiver/Deviation Approvals, for further description.
- 367   **C.9.3 Fire Protection Requirements – (15% Design)**
- 368                   • Site plan indicating fire protection, water supplies, fire hydrants, and fire apparatus access roads.  
369                   • Description of the building’s proposed fire protection systems, including the egress system.  
370                   • Identification of areas to receive automatic sprinkler systems, and/or automatic detection systems,  
371                   smoke control systems, etc., to provide a final concept fire protection and life safety analysis.
- 372   **C.9.4 Historical Preservation Requirements (if required)**
- 373                   • Historic and sensitive areas.  
374                   • Historic preservation concerns, strategies, solutions, and photographic evidence.
- 375   **C.9.5 Operations – (15% Design)**
- 376                   • Inspection, staging, and parking areas.  
377                   • Operations and maintenance strategies.  
378                   • Processing booths.
- 379   **C.9.6 Schematic Design Drawings – Schematic Design (15% Design)**
- 380   The schematic design phase focuses on the macro level design elements. These elements include, but are not  
381   limited to, siting, building massing, and environmental and community impacts and concerns.
- 382   For major projects, a presentation is made to the CBP Commissioner for the final approval.
- 383
- 384



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385

386 Schematic design drawings include, at a minimum:

387

**Table C9.7(1). Schematic Design Drawings – (15% Design)**

SCHEMATIC DESIGN DRAWINGS (15% DESIGN) – ANTICIPATED SUBMITTALS
<b>SITE LOCATION PLAN</b>
<p><b>Site plan</b> [at least 500'-0" around site], describing:</p> <ul style="list-style-type: none"> <li>● Site boundaries, approximate topography, existing buildings, setbacks, and easements.</li> <li>● Building orientation, with respect to the sun’s path.</li> <li>● Building massing and relationship to surrounding buildings massing.</li> <li>● Future building expansion potential.</li> <li>● On-site and off-site utility locations.</li> <li>● Grading and drainage.</li> <li>● General landscape design, showing location of major features.</li> <li>● Pedestrian and vehicular circulation (include direction of traffic on adjoining streets).</li> <li>● Inspection, parking, and service areas.</li> <li>● Fire protection, water supplies, fire hydrants, and fire apparatus access road.</li> <li>● Certified vehicle turn-radius study.</li> </ul>
<b>ARCHITECTURAL DRAWINGS</b>
<ul style="list-style-type: none"> <li>● Demolition plans (if required).</li> <li>● Floor plans, denoting spaces, and critical dimensions.</li> <li>● Access plans, indicating how major mechanical and electrical equipment can be removed/maintained/replaced.</li> <li>● Building facades, showing fenestration and materials elevations</li> <li>● Major interior spaces elevations</li> <li>● Building sections (as necessary), confirming:                         <ul style="list-style-type: none"> <li>● Adequate space for structural, mechanical and electrical, telecommunications, and fire protection systems.</li> <li>● Mechanical penthouses.</li> <li>● Floor-to-floor and other critical dimensions.</li> </ul> </li> <li>● Labeling of important spaces.</li> <li>● Labeling of floor and roof elevations.</li> </ul>
<b>STRUCTURAL DRAWINGS</b>
<p>Structural framing plans of the proposed structural system showing column locations, bay sizes, and location of expansion and seismic joints</p>



SCHEMATIC DESIGN DRAWINGS (15% DESIGN) – ANTICIPATED SUBMITTALS
<b>MEP DRAWINGS</b>
<p><b>Mechanical Drawings</b></p> <ul style="list-style-type: none"> <li>• Demolition plans (if required)</li> <li>• HVAC equipment locations</li> <li>• Air flow riser diagrams representing supply, return, outside air, and exhaust systems</li> <li>• Water flow riser diagrams of the main mechanical systems in the mechanical room(s) and throughout the building</li> </ul>
<p><b>Electrical Drawings</b></p> <p>Provide plans showing electrical system equipment locations, including panels, generators, and building uninterruptible power supply (UPS).</p>
<p><b>Plumbing Drawings</b></p> <ul style="list-style-type: none"> <li>• Proposed building zoning and major piping runs.</li> <li>• Locations of proposed plumbing fixtures and equipment.</li> <li>• Systems schematics and flow diagrams.</li> </ul>
<b>FIRE PROTECTION DRAWINGS</b>
<ul style="list-style-type: none"> <li>• Plans showing fire protection system equipment.</li> <li>• Fire protection water supplies, fire hydrant locations, fire apparatus access roads, and fire lanes.</li> </ul>
<b>HISTORIC PRESERVATION DRAWINGS</b>
<ul style="list-style-type: none"> <li>• Reduced plans, showing preservation concepts.</li> <li>• Elevations and site plans, as needed.</li> </ul>
<b>COLOR RENDERING</b>
<p>Color rendering are 24" x 36" (600 mm x 900 mm) (minimum size).</p>
<b>DETAILED MODEL</b>
<p>Detailed model of the approved concept to convey the architectural intent of the design.</p>



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### 388 C.9.7 Calculations/Code Analysis – Schematic Design (15% Design)

389 Calculations confirm acoustical, lighting, indoor environment, air quality, and other design targets.  
390 Calculations use approved, and when applicable, code-required methods.

391 Schematic design calculations include:

- 392 ● Acoustical calculations, including noise transmission through:
  - 393 ● Building envelope.
  - 394 ● Interior surfaces.
- 395 ● Mechanical and electrical equipment.
- 396 ● Heat transfer.
- 397 ● Dew point.
- 398 ● Plumbing fixtures.
- 399 ● Lighting levels and glare analysis.
- 400 ● Elevator capacity analysis, when required.
- 401 ● Inspection space capacity and maneuverability analysis.
- 402 ● Throughput analysis (and projected wait times).
- 403 ● Occupancy and code calculations.

### 404 C.9.8 Specifications – Schematic Design (15% Design)

405 A specification table of contents is provided by the A/E, including anticipated final design sections, for the  
406 schematic design submittal.

## 407 C.10 DESIGN DEVELOPMENT PHASE (30% DESIGN)

### 408 C.10.1 Value Engineering Reports – Design Development Phase (30% Design)

409 CBP requires an independent value engineering (VE) consultant to facilitate a value engineering study.  
410 Findings and recommendations are presented to CBP for approval, before implementation.

411 In the design development phase, CBP requires a similar study, based on updated information. At this phase,  
412 the VE report focuses on:

- 413 ● Materials and finishes.
- 414 ● Engineering and security systems.
- 415 ● Architectural details.
- 416 ● Building layout.
- 417 ● Phasing and scheduling plans.
- 418 ● Constructability issues.
- 419 ● Civil elements.

420 The design development phase VE report occurs after the submission of design development drawings. The final  
421 design development submission is prepared, upon agreement of implemented VE proposals.



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### 422 C.10.2 Design Development Narrative – (30% Design)

423 The design development narrative includes a statement confirming that the design complies with CBP  
424 requirements, the approved POR, the engineering system design targets, adopted VE changes, and applicable  
425 codes and regulations. The design development narrative includes:

- 426 ● Site Plan:
  - 427 ● Site circulation concept, explaining site entrances, parking spaces, restricted access areas,  
428 traffic calming design, inspection capacities, service vehicle access, and fire lanes.
  - 429 ● Site utilities distribution concept, including fire protection water supply, hydrants, and  
430 drainage.
  - 431 ● Landscape design concept, explaining paving, site furnishings, vegetation, water features,  
432 irrigation, water conservation plan, maintenance plan, and impacts to CBP officer sight lines  
433 and security.
  - 434 ● Site construction description, including hardscape and utility conduits.
  - 435 ● Code analysis for each discipline, to include building and local zoning codes.

### 436 C.10.3 Building concept – (30% Design)

#### 437 A. Geotechnical Report – (30% Design).

438 Provide a geotechnical engineering report, including boring logs (if part of scope of work).

#### 439 B. Architectural, Interior, and Site Design – (30% Design)

#### 440 C. Building Design and Orientation, Adjacencies, Entrance Locations, and Service Locations

- 441 ● Building circulation and arrangement of major spaces.
- 442 ● Finishes selection, furnishings, and internal layout.
- 443 ● Two finish boards for public and tenant interior areas and two finish boards of exterior finishes,  
444 composed of actual material samples and color-coded plans, sections, and elevations of major space  
445 showing their use.
- 446 ● Exterior wall system.
- 447 ● Roofing system(s).
- 448 ● Exterior glazing system.
- 449 ● Interior finishes.

#### 450 D. Structural – (30% Design)

- 451 ● Comparative cost analysis of at least three potential structural framing systems.
- 452 ● Description of recommended structural concept, including:
  - 453 ● Choice of framing system, including lateral load-resisting elements, and proposed foundation  
454 design.
  - 455 ● Required fire-resistance rating of structural elements.
  - 456 ● Summary of special requirements, resulting from applicable local codes.
  - 457 ● Proposed corrosion protection methods (if applicable).



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458 ● Building construction description.

459 ● Structural bay size.

### 460 E. Building Maintenance Plan – (30% Design)

461 ● Cleaning of glazing and special spaces (i.e., canine, detention, and public areas).

462 ● Maintenance of lighting and wall/floor/ceiling surfaces.

463 ● Consideration and prevention of bird nesting, on exterior surfaces.

464 ● Servicing or replacement of major mechanical and electrical equipment.

465 ● Listing required dimension clearances, if necessary.

466 ● Security design, complying with OPR requirements.

### 467 F. Building Keying – (30% Design)

468 The report defines the keying hierarchy for the building, incorporating various levels of access,  
469 security, and fire egress. For keying, the A/E should coordinate with the GSA FPE.

### 470 G. Signage – (30% Design)

471 Provide a signage report, as required in the CBP Signage Design Standard.

### 472 H. Historic Preservation Report – (30% Design)

473 ● Building name, address, project title, project control number, author (preservation architect),  
474 preservation architect's signature, and date of submission.

475 ● Project purpose, scope, groups and individuals involved, and substantive changes to approach,  
476 described in the concept submission.

477 ● Existing conditions, describing overall building size, configuration, character, project location,  
478 materials, alterations, and findings from testing or analysis.

479 ● Preservation solutions explored, how and why they were resolved, and preservation / protection of  
480 historic materials, during construction, through tenant move-in.

481 ● Impacts to the building's significant architectural qualities; also, measures proposed to mitigate  
482 adverse effects on historic materials or design.

483 ● Photographs of general and detail views, showing existing conditions at affected preservation zones.  
484 They are keyed to the plan, showing the location and orientation of each photo view, with captions  
485 identifying location, subject, and condition.

### 486 I. Sustainable Design – (30% Design)

487 ● Sustainable design concepts.

488 ● Energy conservation design elements.

489 ● Water conservation considerations.

490 ● Analysis of refuse removal, recycled materials removal, and maintenance requirements.





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### 491 J. Building Code and Life Safety – (30% Design)

- 492 ● Building egress description including egress calculations, stairway exit capacities, remoteness, exit
- 493 discharge, etc.
- 494 ● Review of building for compliance with life safety and building security requirements.
- 495 ● Interior finish requirements as they pertain to life safety.

### 496 K. Final Mechanical System and Equipment – (30% Design)

- 497 ● Updated indoor and outdoor design conditions for spaces under occupied and unoccupied and 24-
- 498 hour conditions.
- 499 ● Dew point analysis.
- 500 ● Updated ventilation rates, dehumidification, and pressurization criteria for spaces under occupied,
- 501 24-hour, and unoccupied conditions.
- 502 ● Updated equipment capacities, weights, sizes, and power requirements.
- 503 ● Complete description of the air side and water side systems, and the associated components,
- 504 including operating characteristics, ranges, capacities, spaces served, and special features.
- 505 ● Descriptions of control strategy and sequence of operations for spaces under categories under
- 506 occupied and unoccupied, and 24-hour conditions.
- 507 ● Updated fuel and utility requirements.

### 508 L. Electrical – (30% Design)

- 509 ● Description of alternative power distribution schemes, comparing the advantages and
- 510 disadvantages of each approach. Include the source of power, potential for on-site generation, most
- 511 economical voltage, and primary vs. secondary metering.
- 512 ● Proposed power distribution scheme, including a detailed description and justification of the
- 513 selected scheme.
- 514 ● Address special power and reliability requirements, including emergency power and UPS systems.
- 515 ● Proposed lighting systems:
  - 516 ● Typical lighting system features, including fixture type, layout, and type of controls.
  - 517 ● Discuss special spaces, such as lobbies, work areas, inspection/processing areas, detention areas,
  - 518 and support spaces.
  - 519 ● Discuss exterior lighting scheme, including monitored and inspection areas.
  - 520 ● Describe the energy usage of the lighting system.
- 521 ● Methods proposed for energy conservation and integration with BAS

### 522 M. Updated Description of Plumbing System – (30% Design)

523 Provide domestic cold and hot water, sanitary and storm drainage, and irrigation systems.

### 524 N. Telecommunications – (30% Design)

525 Show the proposed telecommunications infrastructure, including systems and cabling. These are

526 designed to comply with CBP National Cabling Standards.



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### 527 O. Fire Resistance and Protection – (30% Design)

- 528 ● Building fire alarm and suppression systems, and interface with BAS and security systems
- 529 ● Smoke control system(s) (when applicable).
- 530 ● Special fire protection systems (i.e., kitchen extinguishing system, LAN Room system) (when
- 531 applicable).
- 532 ● Fire resistance rating of building structural elements.
- 533 ● Mass notification system.

### 534 P. Security Engineering Analysis for Demand Limit Controls – (30% Design)

- 535 ● Description of each proposed alarm/signal system.
- 536 ● Description of proposed security systems' features, and intended mode of operation, including:
  - 537 ● Intrusion detection system (IDS).
  - 538 ● Card access controls.
  - 539 ● Closed-circuit television (CCTV).
  - 540 ● Duress alarm system.

### 541 Q. Sustainable Design and Energy Consumption – (30% Design)

542 Methods proposed for energy conservation and integration with BAS, with engineering analysis for  
543 demand limit controls.

### 544 C.10.4 Design Development Calculations/Code Analysis (30% Design)

545 Design Development calculations include:

#### 546 A. Site Analysis – (30% Design)

- 547 ● Site storm drainage and sanitary sewer calculations.
- 548 ● Storm water detention calculations (if applicable).
- 549 ● Dewatering calculations, during dry and wet season excavation.

#### 550 B. Building Code and Life Safety – (30% Design)

551 Provide occupancy and code calculations.

#### 552 C. Acoustical calculations – (30% Design), including noise transmission through:

- 553 ● Building envelope.
- 554 ● Interior surfaces.
- 555 ● Mechanical and electrical equipment.

#### 556 D. Mechanical – (30% Design)

- 557 ● Heat transfer.
- 558 ● Dew point.



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- 559           • Updated building heating and cooling load calculations.
- 560           • Updated psychrometric calculations for HVAC systems, at full and partial loads.
- 561   E.   Electrical (including lighting) – (30% Design)
- 562           Provide analysis of lighting levels and glare.
- 563   F.   Plumbing considerations – (30% Design)
- 564           Provide plumbing fixtures.
- 565   G.   Elevator – (30% Design)
- 566           Analyze elevator capacity, as required.
- 567   H.   Operations – (30% Design)
- 568           • Inspection space capacity and maneuverability analysis.
- 569           • Throughput analysis (and projected wait times).
- 570   I.   Energy Consumption – (30% Design)
- 571           Updated energy consumption calculations.

**572   C.10.5 Design Development Drawings (30% Design)**

573   Design development finalizes the selection of all systems, with respect to type, size, and other material  
 574   characteristics. Systems include structural, mechanical, fire protection, and electrical. It includes other building  
 575   components such as the building envelope, interior construction, operational spaces, elevators, and support  
 576   spaces.

577   These submissions are not preliminary construction documents. The approval at the project directive meeting  
 578   may require that building layout or size changes be incorporated into the construction documents. No design  
 579   discipline should start work on construction documents until the project directive has been approved. For major  
 580   projects, a presentation is made to the CBP commissioner for the final approval.

581   Design development drawings include, at a minimum:

**582                   Table C-3. Design Development Drawings (30% Design) – Anticipated Submittals**

DESIGN DEVELOPMENT DRAWINGS (30% DESIGN) – ANTICIPATED SUBMITTALS
<b>CIVIL DRAWINGS</b>
<p><b>Site plan</b> (at least 500'-0" around site), describing:</p> <p style="padding-left: 40px;">Grading and drainage plan, showing:</p>



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**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) – ANTICIPATED 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.
- 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.

**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**



DESIGN DEVELOPMENT DRAWINGS (30% DESIGN) – ANTICIPATED SUBMITTALS
<b>SIGNAGE PLANS</b>
Signage Plan and Schedule for building identification, statutory, notification, wayfinding and room identification signs, per the CBP Signage Standard.
<b>INTERIORS FURNISHINGS AND FIXTURES</b>
<p><b>Proposed room finish schedule, showing:</b></p> <ul style="list-style-type: none"> <li>• Floors.</li> <li>• Bases.</li> <li>• Walls.</li> <li>• Ceilings.</li> </ul> <p><b>Proposed site furniture cut sheets and locations</b></p>
<b>STRUCTURAL DRAWINGS</b>
<p><b>Structural Framing Plans</b> of the proposed structural system showing:</p> <ul style="list-style-type: none"> <li>• Column locations.</li> <li>• Bay sizes.</li> <li>• Key details.</li> </ul> <p>Location of expansion and seismic joints.</p>
<b>MEP DRAWINGS</b>
<p><b>Mechanical Drawings</b></p> <p>Building floor and roof plans, showing: Locations of mechanical equipment and penetrations.</p>
<p><b>Electrical Drawings</b></p> <ul style="list-style-type: none"> <li>• Site plan showing:             <ul style="list-style-type: none"> <li>• Proposed site distribution for power and communication.</li> <li>• Proposed service entrance.</li> <li>• Location of transformers, generators, and vaults, etc.</li> </ul> </li> <li>• Floor plans showing:             <ul style="list-style-type: none"> <li>• Proposed major electrical distribution scheme and locations of electrical rooms and closets and communication closets.</li> <li>• Proposed major routing of major electrical feeder runs, bus duct, communication backbone systems, and security systems.</li> </ul> </li> </ul>



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**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.

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<b>DESIGN DEVELOPMENT DRAWINGS (30% DESIGN) – ANTICIPATED SUBMITTALS</b>
<b>HISTORIC PRESERVATION DRAWINGS</b>
<ul style="list-style-type: none"> <li>• Reduced plans showing preservation concepts.</li> <li>• Elevations, plans, and section details showing preservation design solutions for each issue identified, per the regional preservation officer’s approval.</li> </ul>
<b>COLOR RENDERING</b>
Color rendering is 24" x 36" (600 mm x 900 mm) (minimum size) if the design has changed from the Schematic Design Phase.

583 **C.10.6 Calculations**

- 584 • Life Safety
- 585     Occupant load and egress calculations.
- 586 • Lighting
  - 587     • Lighting calculations for inspection, administrative, detention, support, and outdoor spaces.
  - 588     • Life-cycle cost analysis of luminaire/lamp system and associated controls.
  - 589     • Power density analysis for lighting of each area.
- 590 • Mechanical and Plumbing Energy Consumption
  - 591     • Updated water consumption calculations and analysis including make-up water for HVAC
  - 592     systems, domestic water consumption, and water consumption for irrigation.
  - 593     • Updated fuel consumption estimates.
- 594 • Fire Resistance and Protection
  - 595     • Fire protection water supply calculations, including water supply flow testing data.
  - 596     • Fire pump calculations (when applicable).
  - 597     • Smoke control calculations (when applicable).
  - 598     • Stairway pressurization calculations (when applicable).
  - 599     • Calculations contained in the SFPE Handbook of Fire Protection Engineering for calculating
  - 600     sound attenuation through doors and walls for placement and location of fire alarm system
  - 601     audible notification appliances.

602 **C.10.7 Specifications**

603 At the design development phase, the A/E assembles all project-related construction guide specifications. Next,  
 604 they draft engineering specification sections and mark out content that does not apply to the project.



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605

### 606 C.11 CONSTRUCTION DOCUMENTS PHASE – (60% THROUGH THE FINAL DESIGN)

607 In the construction documents phase, CBP requires a similar study at the 60% progress submittal. The final set  
608 of construction documents incorporate approved recommendations from this study.

#### 609 C.11.1 Construction Documents Narrative – (60% through the Final Phase)

610 The construction documents narrative includes a statement confirming that the design fully complies with CBP  
611 requirements, the approved POR, the engineering system design targets, adopted VE changes, and applicable  
612 codes and regulations. The narrative is signed by the A/E. In addition, the construction documents narrative  
613 focus on the building engineering systems, including the following information:

614 ● Code Compliance

615 A final Mechanical code compliance statement

616 ● Description of the final mechanical system and equipment selection including:

- 617 ● Final indoor and outdoor design conditions for all spaces under occupied, 24-hour, and  
618 unoccupied conditions.
- 619 ● Final ventilation rates, dehumidification, and pressurization criteria for all spaces under  
620 occupied, 24-hour, and unoccupied conditions.
- 621 ● Final equipment capacities, weights, sizes, and power requirements.
- 622 ● Final psychometrics of HVAC systems.
- 623 ● A final description of deviation from the HVAC system as approved in the schematic design  
624 phase submittal.

625 ● Mechanical/Electrical

626 Final fuel and utility requirements

627 ● Plumbing

628 Description of plumbing system, including domestic cold and hot water, sanitary and storm drainage,  
629 and irrigation systems

630 ● Operations

- 631 ● A final description of the air side and water side systems and the associated components  
632 including operating characteristics, ranges and capacities, spaces served, and special features.
- 633 ● Final descriptions of the control strategy and sequence of operations for all spaces under  
634 occupied, 24-hour, and unoccupied conditions.

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### 638 C.11.2 Construction Documents Phase Calculations – (60% through the Final Design)

639 Construction documents calculations include:

640 ● Site calculations.

641 ● Final drainage calculations, including storm water detention.

642 ● Pipe sizing calculations for water and sewer pipes.

643 ● Pavement design calculations.

644 ● Life safety calculations.

645 Final occupant load and egress calculations

646 ● Structural calculations

647 ● Final structural calculations, including:

648 - Gravity loads.

649 - Lateral loads.

650 - Foundations.

651 ● Supports for nonstructural elements, including mechanical and electrical equipment on the roof  
652 and in equipment rooms, louvers, and other penetrations.

653 ● Steel connections.

654 ● Blast analysis.

655 ● Sizing of vibration isolators for mechanical equipment.

656 ● Mechanical calculations.

657 ● Final heat transfer.

658 ● Final dew point.

659 ● Thermal loads where significant.

660 ● Final system pressure static analysis at peak and minimum block loads for occupied and  
661 unoccupied conditions.

662 ● Building pressurization analysis for peak and minimum block loads for occupied and unoccupied  
663 conditions.

664 ● Final building heating and cooling load calculations.

665 ● Final selection of mechanical equipment, cut sheets of selected equipment.

666 ● Final psychrometric calculations for the selected HVAC systems at full and partial loads.

667 ● Final energy consumption calculations.

668 ● Final fuel consumption estimates.

669 ● Sizing of fuel storage and distribution system.

670 ● Electrical calculations.

671 ● Final lighting levels and glare analysis.

672 ● Lighting calculations for inspection, administrative, detention, support, and outdoor spaces.



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- 673 ● Short circuit and voltage drop calculations.
- 674 ● Overcurrent coordination.
- 675 ● Generator calculations including start-up loads.
- 676 ● Plumbing calculations.
  - 677 ● Final plumbing fixtures.
  - 678 ● Flow and head calculations for pumping systems for peak and minimum block loads for occupied conditions.
  - 679
  - 680 ● Final roof drainage calculations and hot water heating calculations.
  - 681 ● Water supply calculations, including pressure.
  - 682 ● Sanitary waste sizing calculations.
  - 683 ● Final water consumption calculations and analysis including make-up water for HVAC systems, domestic water consumption, and water consumption for irrigation.
  - 684
- 685 ● Fire protection calculations.
  - 686 ● Final fire protection water supply calculations, including water supply flow testing data.
  - 687 ● Final fire pump calculations (when applicable).
  - 688 ● Final smoke control calculations (when applicable).
  - 689 ● Final stairway pressurization calculations (when applicable).
  - 690 ● 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.
  - 691
  - 692
- 693 ● Acoustical calculations.
  - 694 ● Final acoustical calculations, including noise transmission through:
    - 695 - Building envelope
    - 696 - Interior surfaces
    - 697 - Mechanical and electrical equipment
  - 698 ● Vibration propagation
  - 699 ● Acoustical calculations for peak and minimum block loads for occupied conditions

### 700 C.11.3 Construction Documents – (60% through the Final Design)

701 This phase requires a detailed set of documents coordinated by all disciplines into one coherent document to  
 702 become the basis for a construction contract. The construction documents should include all levels of detail  
 703 drawings from site planning to construction details, with specifications, cost estimates, and calculations. The  
 704 construction documents progress set is reviewed at a minimum at 60, 90, and 100%, and approved by CBP  
 705 before proceeding.

706 Construction documents include, at a minimum, items shown in the following table.



**Table C – 5. Construction Documents (60% through the Final Design)**

<b>CONSTRUCTION DOCUMENTS (60% THROUGH THE FINAL DESIGN) – ANTICIPATED SUBMITTALS</b>
<b>SITE PLANNING DRAWINGS</b>
<p><b>Site Planning Drawings</b> (the plans listed below, except the demolition plans, may be combined on small projects)</p> <ul style="list-style-type: none"> <li>● Demolition plans (if required).</li> <li>● Site layout plan, including:                             <ul style="list-style-type: none"> <li>● Location of all buildings, roads, walks, accessible routes from parking and public street to port entrance, parking and other paved areas, and planted areas.</li> <li>● Limits of construction.</li> <li>● Locations and sizes of fire protection water supply lines, fire hydrants, fire apparatus access roads, and fire lanes.</li> <li>● Location of floodplains and wetlands.</li> </ul> </li> </ul> <p><b>Grading and drainage plan, showing:</b></p> <ul style="list-style-type: none"> <li>● Existing and new contours - use 2'-0" (600 mm) interval (minimum) in area around buildings.</li> <li>● Spot elevations at all entrances and elsewhere as necessary.</li> <li>● Elevations for walls, ramps, terraces, docks, plazas, and parking lots.</li> <li>● All surface drainage structures.</li> <li>● Water retention and conservation systems.</li> <li>● Site utilities plan, showing all utilities, including inlets, manholes, clean-outs, and invert elevations.</li> <li>● Survey of surrounding buildings, structures, and improvements in wet and dry season to document preconstruction elevations.</li> </ul> <p>Potential archeological artifacts.</p>
<b>LANDSCAPE DRAWINGS</b>
<p><b>Planting plan, showing:</b></p> <ul style="list-style-type: none"> <li>● Building outline, circulation, parking, and major utility runs.</li> <li>● Size and location of existing vegetation to be preserved (include protection measures during construction).</li> <li>● Location of and identity function of all new plant material (i.e., windbreak or visual screen where appropriate).</li> <li>● Erosion control.</li> </ul> <p>Planting schedule, showing quantity of plants, botanical names, planted size, and final size. Irrigation plan, if applicable, including schematic of irrigation control system.</p> <p>Planting and construction details, profiles, sections, and notes as necessary to fully describe design intent, and construction phasing, if part of project.</p>



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**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.



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### 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.



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### 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.





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**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.



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### 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.



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### 708 C.11.4 Specifications – Construction Documents (60% to Final Phase)

709 At the construction documents phase, the A/E submits a full set of specifications, including:

- 710 ● Schedules for room finish, ceiling types, floor finish, color, and doors (can be incorporated into either
- 711 the specifications or drawings).
- 712 ● Building envelope thermographic scan identifying sources of heat transfer.
- 713 ● Visual and performance mockups assemblies for spaces (i.e., inspection/processing stations and
- 714 detention spaces).
- 715 ● Architectural and Electrical lighting fixture type schedule.
- 716 ● Historical preservation technical specifications for repair and restoration of historic materials,
- 717 including:
  - 718 ● Specialized materials and procedures for repair and restoration of historic materials.
  - 719 ● Procedures for protecting historic materials in areas being altered.
  - 720 ● Sample review requirements of repair and restoration procedures.

### 721 C.11.5 Cost Estimates – Construction Documents (60% to Final Phase)

722 Cost estimates are provided at the schematic design, design development, and construction documents phases  
723 as required, per this Standard, Section C.1.

### 724 C.11.6 Historical Preservation

725 Sample submittal requirements are provided for replacement materials and new installations in preservation  
726 zones.

## 727 C.12 ACCEPTANCE/OCCUPANCY PHASE

### 728 C.12.1 Project Closeout Schedule – CBP Acceptance/Occupancy Phase

729 The project closeout schedule includes coordinated dates for all inspections and special CBP installations,  
730 including but not limited to:

- 731 ● Red zone inspection.
- 732 ● The AHJ inspection.
- 733 ● CBP surveillance system positioning and approval/system commissioning.
- 734 ● The OIT cabling termination and Go-Live.
- 735 ● Punch list walk-throughs.
- 736 ● CBP occupancy.

737 The project closeout schedule is approved by the entire project team and is updated frequently to reflect project  
738 delays.

### 739 C.12.2 Equipment Manuals and Warranties – CBP Acceptance/Occupancy Phase

740 An operations manual is prepared, and training provided for the building operations and maintenance personnel  
741 describing the design objectives and how to operate the building. The manual includes equipment data, model



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742 numbers for the equipment, parts lists, equipment options, operating manuals for each piece of equipment,  
743 testing and balancing reports and certifications, maintenance schedules, videos, and warranty schedules. The  
744 manual is reviewed and certified complete by the FOF PMO PM before submission to local CBP.

### 745 C.12.3 As-built Drawings – CBP Acceptance/Occupancy Phase

746 As-built drawings are provided to CBP in electronic and hard copy format for all projects.

### 747 C.12.4 Certificate of Occupancy – CBP Acceptance/Occupancy Phase

748 CBP may not occupy a facility until the AHJ has issued a Certificate of Occupancy to the FOF PMO PM.  
749 Issuance of a Certificate of Occupancy shall not signify approval of a violation of a national code, or a CBP design  
750 standard, or a requirement. The AHJ issues a Certificate of Occupancy to the FOF PMO PM once the AHJ has  
751 determined that fire protection and life safety systems have been completed, inspected, successfully tested and  
752 approved, and all outstanding fire and life safety deficiencies have been corrected to ensure a reasonable degree  
753 of safety to the building occupants from fire and similar emergencies.

754 The AHJ may be authorized to issue a temporary Certificate of Occupancy that allows partial occupancy of the  
755 building in a specific area(s), before completion of the entire project. The temporary Certificate of Occupancy  
756 identifies the specific area(s) of the project where occupancy is permitted; it will be issued if all life safety and  
757 fire protection systems serving the areas proposed for occupancy and all the floors below have been completed,  
758 inspected, successfully tested, and approved by the AHJ.

759 Following the issuance of a temporary Certificate of Occupancy, the AHJ sets a time frame for the completion  
760 of all remaining life safety and fire protection systems and the correction of outstanding life safety and fire  
761 protection deficiencies. The AHJ issues a (final) Certificate of Occupancy to the FOF PMO PM once the AHJ  
762 has determined that fire protection and life safety systems have been completed, inspected, successfully tested,  
763 and approved, and all outstanding fire and life safety deficiencies have been corrected.

### 764 C.12.5 Commissioning Plan – CBP Acceptance/Occupancy Phase

765 The commissioning plan is turned over at the end of the construction phase. The commissioning plan is  
766 continuously updated by the commissioning agent throughout the pre-design, design, construction, and  
767 occupancy phases of the building life cycle. At a minimum, the commissioning plan includes:

- 768 ● Commissioning scope and overview, specific to the project.
- 769 ● General project information.
- 770 ● Commissioning team members, roles, and responsibilities.
- 771 ● General communication plan and protocol.
- 772 ● Commissioning process tasks and activities through all phases.
- 773 ● Commissioning schedule.
- 774 ● Commissioning process documentation and deliverables.
- 775 ● Required testing procedures.
- 776 ● Recommended training.
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779 The following materials are added (as applicable) to the appendix of the completed commissioning plan:

- 780 ● Owner’s project requirements.
- 781 ● Basis of design.
- 782 ● Commissioning specifications.
- 783 ● Design review.
- 784 ● Submittal review.
- 785 ● Issues log.
- 786 ● Construction checklists.
- 787 ● Site visit and commissioning meeting minutes.
- 788 ● Systems manual review.
- 789 ● Training.
- 790 ● Functional performance and seasonal testing procedures.
- 791 ● Warranty review.
- 792 ● Test data reports.
- 793 ● Sequence of operation (matrix).

**794 C.13 ALTERATIONS PROJECT SUBMITTALS**

795 Submittal requirements differ for new construction and renovation projects. For definitions of these project  
 796 types, refer to this Standard, Chapter 2, Cargo Facilities Planning and Programming. All submittals follow the  
 797 submittal requirements listed in the table below and as defined in this Standard, per the project scope.

798 **Table C – 6. Alterations Project Submittals**

PRE-DESIGN AND PROGRAMMING PHASE SUBMITTALS	
<ul style="list-style-type: none"> <li>● Updated Facility Long-Term Master Plan</li> <li>● Waiver/Deviation Approvals</li> <li>● LEED Documentation / Energy Analysis</li> </ul>	<ul style="list-style-type: none"> <li>● Preliminary Concept Narrative/Drawings</li> <li>● NEPA Documentation</li> <li>● Site Survey</li> </ul>
SCHEMATIC DESIGN PHASE SUBMITTALS	
<ul style="list-style-type: none"> <li>● Schematic Design Narratives</li> <li>● Calculations/Code Analysis</li> <li>● Waiver/Deviation Approvals</li> <li>● LEED Documentation / Energy Analysis</li> </ul>	<ul style="list-style-type: none"> <li>● Schematic Drawings/Renderings / Photos</li> <li>● Cost Estimates</li> <li>● Design Review Forms</li> <li>● Value Engineering Report</li> </ul>



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DESIGN DEVELOPMENT PHASE SUBMITTALS	
<ul style="list-style-type: none"> <li>• Design Development Narratives</li> <li>• Calculations/Code Analysis</li> <li>• Waiver/Deviation Approvals</li> <li>• LEED Documentation/Energy Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Design Development Drawings</li> <li>• Cost Estimates</li> <li>• Design Review Forms</li> <li>• Value Engineering Report</li> </ul>
CONSTRUCTION DOCUMENTS PHASE SUBMITTALS	
<ul style="list-style-type: none"> <li>• Updated Building System/Site Narratives</li> <li>• Updated Calculations/Code Analysis</li> <li>• Specifications</li> <li>• LEED Documentation / Energy Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Final Drawings</li> <li>• Cost Estimates</li> <li>• Design Review Forms</li> <li>• Value Engineering Report</li> </ul>
CONSTRUCTION PHASE SUBMITTALS	
<ul style="list-style-type: none"> <li>• Bid/Award Reports</li> <li>• Baseline Project Schedule</li> <li>• Baseline Project Budget</li> <li>• Updated Schedule/Budget</li> </ul>	<ul style="list-style-type: none"> <li>• Milestone Schedule</li> <li>• Change Requests/Log</li> <li>• Manufacturer Submittals/Shop Drawings</li> <li>• Punch List</li> </ul>
CBP ACCEPTANCE / OCCUPANCY PHASE SUBMITTALS	
<ul style="list-style-type: none"> <li>• Project Closeout Schedule</li> <li>• AHJ Certifications/Certificate of Occupancy</li> <li>• LEED Certification</li> </ul>	<ul style="list-style-type: none"> <li>• Equipment manuals and warranties</li> <li>• As-Built Drawings and Commissioning Plans</li> </ul>

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# EQUIPMENT

## Cargo Facilities Design Standard 2019 (Draft)



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**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 Section D.2
- Cargo Inspection Tables Section D.3
- Video Spectral Comparator (VSC) Imaging System Section D.4
- 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).
- Occupational Safety and Health Administration (OSHA) Standards for Ionizing Radiation (29 C.F.R. 1910.1096).
- 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.



## U.S. Customs and Border Protection

### 1 D.2.4 Features

- 2 ● Horizontal and vertical view of inspection target.
- 3 ● Multi-energy imaging (4 color).
- 4 ● Density threat alert.
- 5 ● High/low penetration.
- 6 ● Variable gamma.
- 7 ● Pseudo color.
- 8 ● Variable density zoom.
- 9 ● Organic/Inorganic stripping.
- 10 ● Black and white viewing.
- 11 ● Variable color stripping.
- 12 ● Zoom.
- 13 ● View previous bag.
- 14 ● Automatic image archiving.
- 15 ● Manual image archiving.
- 16 ● Baggage counter.
- 17 ● Search indicator.
- 18 ● Date/time display.
- 19 ● Remote workstation.

## 20 D.3 CARGO INSPECTION TABLES

### 21 D.3.1 Inspection Tables

- 22 ● Tables must not be used for cargo storage.
- 23 ● Two general inspection tables are required for inspecting miscellaneous cargo, occasional shipments of
- 24 cut flowers, fruits, and vegetables.
- 25 ● The minimum dimensions of the tables should be 36”h x 48”w x 96”l.
- 26 ● The surface of the tables is cleanable and smooth. Stainless-steel table tops are preferred.

### 27 D.3.2 Fruit and Vegetable Inspection Tables

- 28 ● Recommended for facilities that regularly processes fruits and vegetables. The fruit and vegetable tables
- 29 may be constructed with more than two compartments.
- 30 ● Tables contain a trapdoor which lifts/slides up easily.
- 31 ● The tables incline or tilt 20 degrees.
- 32 ● Each bin is 36” x 36” square.
- 33 ● Maximum table ledge dimension is 12” high.
- 34 ● The minimum dimensions of the tables should be 36”h x 48”w x 96”l.
- 35 ● The surface of the tables is cleanable and smooth. Stainless-steel table tops are preferred.
- 36 ● Hooks are conveniently located near top of table.

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### 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).

# NII EQUIPMENT

## Cargo Facilities Design Standard 2019 (Draft)



**U.S. Customs and  
Border Protection**



**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)**



**U.S. Customs and Border Protection**

1 B. Operational considerations

2 Key operational considerations for the DNDO RPM design are listed below:

- 3 • Vehicles must stop a sufficient distance upstream of the RPM to allow the RPM to obtain background
- 4 radiation measurements prior to scanning. Stop signs and/or stop lines painted in the roadway can
- 5 accomplish this. These should be located 10' upstream of RPMs.
- 6 • Only one vehicle is routed through the portal at a time. This can be accomplished with appropriate
- 7 signage upstream of the portal, such as a stop sign and a sign directing traffic to "STOP, PROCEED
- 8 WHEN CLEAR".
- 9 • Vehicles do not stop as they pass through the RPMs. This can be accomplished by locating the primary
- 10 RPMs sufficiently upstream of the inspection booth so vehicles can pass through the portal before having
- 11 to stop for inspection. Appropriate signage such as "DO NOT BLOCK PORTAL" and cross-striping of
- 12 lane will be used.
- 13 • Vehicle speed must be controlled so the vehicle passes through the portal at 5 mph or less. The primary
- 14 means of accomplishing this is by having the vehicles stop before they proceed through the portal. Speed
- 15 bumps may be used upstream of RPMs. A speed limit sign may be used in addition to the speed bumps.
- 16 • When an alarm occurs, the officer in that lane must be able to quickly identify the vehicle that caused
- 17 the alarm. This is accomplished by having the RPM sufficiently close to the booth so a queue of cars
- 18 cannot develop between the RPM and inspection booth. See Table E.1 below for recommended RPM
- 19 placement. Where this is not possible, cameras may be included in the design.

20 **E.1.2 Technical Requirements**

21 A. Location and Space

22 Criteria for the placement of the RPMs, as shown in the table below, are needed to ensure positive

23 identification by providing line of sight, an accessible route to secondary inspection, and compatibility with

24 other CBP equipment, e.g., license plate readers (LPRs), vehicle and cargo inspection systems, and empty

25 truck portals. This also ensures the RPM detection requirements are met and minimizes adverse effects on

26 port operations. Preferred placement is upstream of the LPR zone to avoid interference with the LPR system

27 used by CBP. Portal monitors must be located away from areas of locally elevated background radiation.

28 Chokepoint RPMs may be used where there is insufficient room to place portal monitors on each lane or

29 where other limitations exist. These chokepoint RPMs require special traffic control or monitoring features,

30 which often includes VIS cameras.

31 **Table E.1. Recommended Portal Placement**

Criteria	POV <sup>1</sup> Lane	Bus Lane	Cargo Lane	Wide Cargo Lane
RPM Type	POV	Bus	Cargo	Wide-Lane Cargo
Upstream distance from booth	40'	50'	80 to 120'	80 to 120'
Minimum distance from Empty Truck Portal source <sup>2</sup>	100'	100'	100 to 120'	100 to 120'
Minimum distance from Eagle® source <sup>2</sup>	150'	150'	150'	150'
Minimum distance from VACIS® source <sup>2</sup>	100'	100'	100'	100'



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Curb height	6"	6"	6"	6"
GSA recommended lane width	12'	14'	14'	16'
Representative stand-to-stand distance <sup>3</sup>	11.8'	13.6'	14.0'	17.1'

(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.

1 The primary consideration for the placement of the primary inspection RPMs is the location and orientation  
2 of primary inspection lanes and booths.

3 As described later in this appendix, CBP employs numerous radiation emitting devices as part of the NII  
4 imaging capability. The impact of each type of NII equipment, which emits radiation that the RPMs can  
5 detect, needs to be evaluated by the NII equipment manufacturer in coordination with the OFO NII PMO.  
6 The FOF PMO PM shall consult the OFO NII PMO and the NII equipment manufacturer.

7 The recommended minimum distance an empty truck RPM can be deployed is 100' from other RPMs. These  
8 distance requirements prevent the empty truck portal source from producing interfering background in the  
9 nearby RPMs. The empty truck portal source should not be pointed directly toward the RPM when in use.  
10 Therefore, the minimum distance a high-energy mobile truck X-ray system should be deployed is 150' from  
11 any RPM. If the portal cannot meet the separation requirement, then the source must be mobile, shielded,  
12 or operationally controlled to meet secondary portal background requirements.

13 Other sources that may be encountered include pallet gamma ray on the dock, pulsed fast neutron analysis,  
14 high-energy gantry systems, empty truck portal systems, high-energy mobile NII systems, and other types  
15 of X-ray machines. If these types of systems are included in a design, contact the CBP Interdiction  
16 Technology Branch (ITB) project manager (FOF PMO PM shall consult with OFO NII PMO) for technical  
17 guidance on the required stand-off distance from the RPMs.

### 18 B. Primary Portal Placement

19 The following are general guidelines for primary portal placement:

- 20 ● Designate a stopping point to control speed through the portal (using speed bumps as necessary and  
21 appropriate), prevent a vehicle from stopping in the portal, and prevent vehicles queuing between the  
22 portal and the inspection booth.
- 23 ● Control vehicle queuing, which may be required on an exception basis, with signage and/or traffic lights  
24 to meet port specific needs.
- 25 ● Locate the portal monitor prior to the existing inspection booths.
- 26 ● Coordinate with other technology programs (empty truck portal, LPRs, etc.).
- 27 ● Ensure other technology programs (empty truck portal, LPRs, etc.) will not interfere with portal  
28 placement.
- 29 ● Ensure the RPMs do not obstruct the LPR camera views.
- 30 ● Ensure the distance between the inspection booths and the portal permits vehicles are of reasonable  
31 length to completely pass through the portal before stopping for primary inspection.
- 32 ● Ensure RPMs are within the direct line of sight of the inspection booth.



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### 1 C. Cargo

2 Cargo lanes require a cargo RPM. Portal monitors need to be at least 80' upstream of the inspection booth  
3 to allow enough distance for a standard tractor-trailer to proceed through the portal. Longer distances need  
4 to be employed with care on a case-by-case basis. Longer distances may be needed where tandem trailers  
5 are frequent, but encroachment into the portal needs to be avoided. A wide-lane portal is required for lanes  
6 wider than 16'.

7 Sites having tight approach turns to enter primary inspection may require computer simulation  
8 (AutoTURN<sup>®1</sup> and/or field verification, such as placement of cones) to validate adequate clearance. Traffic  
9 control devices must be used.

10 Wide-lane portal configurations may be used to accommodate approach issues where the approach is not  
11 straight.

12 The empty truck portal technology is deployed by CBP on primary cargo (typically empty) lanes. The RPM  
13 and the empty truck portal should be separated by a minimum of 100'.

### 14 D. Portal Spacing and Orientation Requirements

15 Spacing (stand-to-stand separation) requirements are based on cargo facility background radiation levels.  
16 Specific requirements for portal spacing and orientation are determined by DNDO and may include:

- 17 • Lanes should be designed as narrow as feasible (given existing conditions) to minimize stand-to-stand  
18 distances. Consultation with the OFO NII PMO is required to confirm the RPM lane widths. Background  
19 radiation measurements are necessary. Construction materials with elevated background radiation are  
20 prohibited, unless approved by the OFO NII PMO.
- 21 • The RPMs must be square across the lane.
- 22 • Stands must be level across lanes within 3".
- 23 • Maximum curb height is 6".

### 24 E. Installation

25 A RPM system is composed of the battery box that provides an uninterruptible power supply for the RPM,  
26 control box, alarm annunciator, Ethernet switch, supervisory computer, monitoring computer(s), and portal  
27 shrouds and radiation sensor panels. The supervisory computer, monitoring computer(s), circuit and  
28 Ethernet switch, and annunciator are located as directed by the FOF PMO PM. The portal is in the traffic  
29 lane. The control box, battery box, and portal can have three component configurations:

- 30 • Control box and battery box mounted remotely from the portal (typically at or near the inspection booth).  
31 This is the preferred location.
- 32 • Control box and battery box mounted on the portal. This is the default location.
- 33 • Control box and battery box mounted remotely from the portal in a centralized equipment bank. This is  
34 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.





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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.

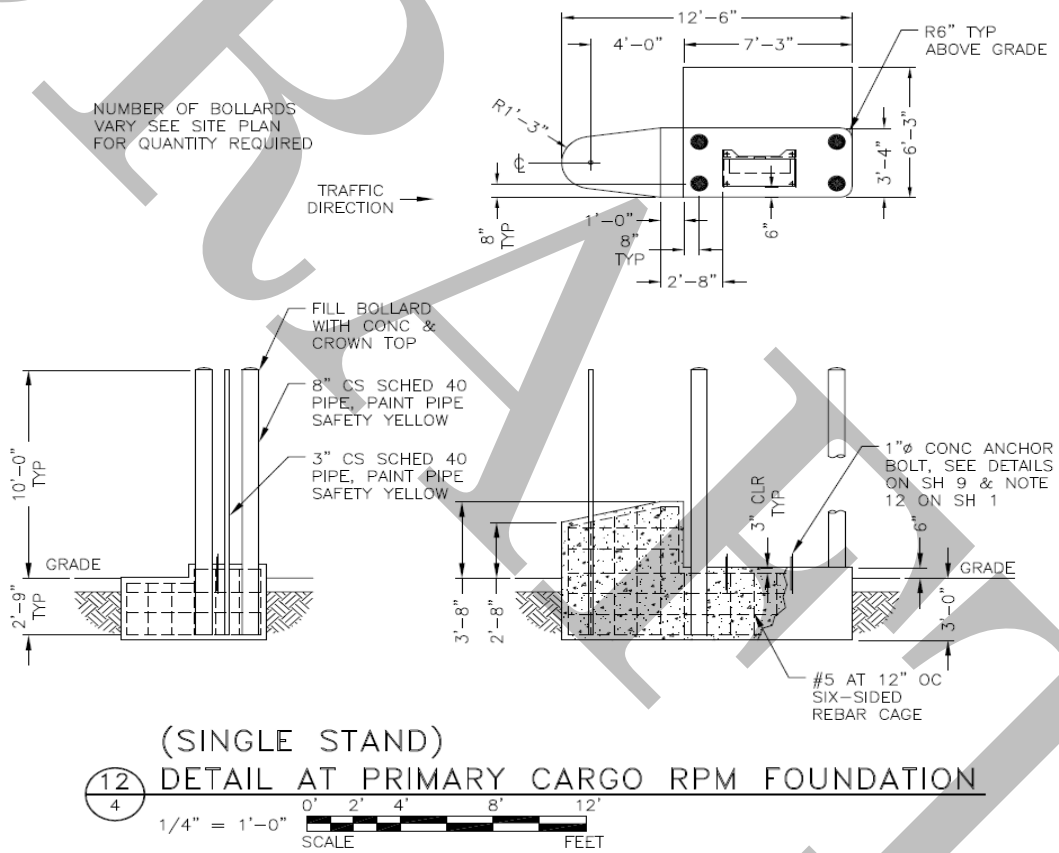


Figure E-2. Example of an RPM Foundation

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1 An example of an RPM foundation is provided in Figure E-2. This is for a cargo RPM with a bullnose suitable  
2 for installation in a location with a minimum soil bearing pressure of 2500 psf., a maximum frost line of 2'  
3 6," and maximum wind and seismic loads of 110 mph and 0.4 g, respectively. Foundations for specific  
4 installations vary, depending on local conditions, and need to be designed by a professional engineer.

### 5 G. RPM Protection and Traffic Control Devices

6 Concrete bullnoses, curbs, bollards, signage, lighting, and lane stop lines are positioned to protect the portal  
7 from equipment damage due to vehicular traffic. In some jurisdictions, the department of transportation  
8 (DOT) may request additional concrete jersey barriers and active crash attenuator equipment. Additional  
9 grounding devices are located on or near the RPM to protect the system from lightning strikes.

10 Traffic control devices include traffic light controllers (TLCs) and associated traffic lights, stop signs, stop  
11 lines, gate arms, directional pavement lines, bollards, and speed bumps. Stop lines should be placed 10'  
12 from the leading edge of a primary RPM. The stop line for a secondary RPM should be placed at 20' from the  
13 leading edge of the RPM. Speed bumps may be added at the entrance to the RPMs to ensure traffic slows  
14 down and stops before entering the RPM. This prevents excessive speed while transiting through the RPM.

### 15 H. Power

16 Back-up 120V alternating current (AC) power is required to operate a RPM system. At sites where backup  
17 120 VAC power is not available, special arrangements (e.g., installation of a backup generator) may be  
18 required to meet this requirement. Branch circuit breakers are typically 15A and are compatible with  
19 existing commercially available locking mechanisms. Each RPM must be on a separate circuit breaker. Each  
20 RPM has a peak load of 3.5A. If next generation RPMs are deployed, their peak load may be greater.  
21 Grounding of equipment to support lightning suppression is required. Daisy-chain grounding is not  
22 permitted.

### 23 I. Information Technology/Data

24 Installation of the RPM infrastructure must be installed per the CBP Office of Information and Technology  
25 (OIT) Enterprise Network and Technology Support Division's "Installation and Design Guidance Document:  
26 Communications and Network Infrastructure." When installed in outdoor locations, the network equipment  
27 must operate in a temperature range of -40°F to a maximum of 149°F.

## 28 E.1.3 Challenges/Limitations

### 29 A. Compatibility with Other Equipment

30 Incompatibility includes conflicts of locating the RPMs near known cargo facilities radiation emitting  
31 equipment.

32 There are incompatibility issues with Western Hemisphere Travel Initiative (WHTI) and Land Border  
33 Integration (LBI) infrared identification (RFID) equipment. Placing the RPMs within the LPR zone,  
34 especially between the sensors, shall be avoided. There may be equipment modifications that can be  
35 implemented if such a location is necessary, as determined by CBP.

36 Employ conduits in the primary plaza where multiple interdiction technologies are being implemented.



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### 1 B. Climate

2 The RPMs and associated equipment (control boxes and battery boxes) are designed to operate in a  
3 temperature range of -40°F to 140°F and an operating humidity range of 20% to 90% non-condensing. If  
4 mounted externally, network components, such as Ethernet switches and media converters, must also meet  
5 these specifications, and must be mounted in National Electrical Manufacturers Association (NEMA) 4/4X  
6 enclosures. In colder climates, battery boxes may be remotely located in heated spaces.

### 7 **E.1.4 Opportunities**

#### 8 A. Coordination/Integration with Other Equipment

9 As noted in Table E.1, the placement of the primary RPMs shall be coordinated/integrated with other  
10 equipment installed in the lanes upstream of the inspection booth. Coordination and integration of the LPRs  
11 in the POV lanes is required. As noted in Section E.1.2, the placement of the RPMs (especially secondary  
12 cargo) shall be coordinated with CBP (FOF PMO PM shall consult with the OFO NII PMO) and integrated  
13 with the placement of large-scale NII technology, such as gamma-ray and X-ray imaging equipment.

#### 14 B. Standardization

15 The RPM designs for different ports will have a great degree of commonality based on the considerations  
16 presented. Differences in port layout, size, footprint, and operations make it impossible for DNDO to develop  
17 a standardized design for all ports.

## 18 **E.2 EMPTY TRUCK PORTAL**

### 19 **E.2.1 Overview**

#### 20 A. System or Component Operation

21 An empty truck portal is a low-energy NII system used by CBP at cargo facilities. The portal is optimally  
22 located in pre-primary to scan only empty commercial trucks to verify that a truck is empty (i.e., no cargo,  
23 stowaways, hidden compartments, etc.). The portal system consists of two towers, aligned across from one  
24 another, spanning a pre-primary commercial traffic lane, see Figure E-2. The towers are protected by  
25 concrete bull-nose barriers, curbs, and bollards, with signage, a camera, and stoplights before and after the  
26 towers to control traffic flow. The operations of the portal are managed by an officer using a computer within  
27 the primary booth in the corresponding traffic lane.



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**Figure E-3. Empty Truck Portal Towers**

### 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.



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1 The operation of the empty truck portal is controlled by the officer via computer in the corresponding  
2 primary booth. The booth workspace should be adequately spaced for a UPS and computer workstation(s)  
3 as required in all primary booths. The booth should support the number of officers, identified by CBP,  
4 required for truck processing activity and empty truck portal image analysis.

### 5 B. Installation

6 Contact CBP (FOF PMO PM shall consult with the OFO NII and DNDO PMOs) for the most recent tower  
7 foundation and bolt pattern plans.

### 8 C. Power and Data

9 The system requires 220V, 30A single-phase power that is typically accessed at the corresponding primary  
10 booth. Conduit for future data links to the port office should be provided.

11 Power and data conduits are parallel to the traffic lane from the primary booth to the corresponding portal  
12 tower, traffic signals, and camera. There is one set of conduits that cross the traffic lane from tower to tower.

## 13 E.2.3 Challenges/Limitations

### 14 A. Compatibility with Other Equipment

15 The portal requires a minimum 100' stand-off distance from an RPM or a next generation RPM. There are  
16 no other known conflicts with appropriately shielded systems.

### 17 B. Climate

18 The portal is designed to withstand temperatures ranging from -40°F to 140°F. The portal installation is  
19 the same for the northern and southern borders. Appropriate snow/ice removal shall occur to avoid snow  
20 accumulation or damage to the towers.

### 21 C. Snow Removal

22 Along the northern border Cargo Facilities, close cooperation with local agencies, DOTs, cities, and counties,  
23 responsible for snow removal is essential for winter operations. CBP operations require local agencies or  
24 private contractors to remove snow at Cargo Facilities, including RPM lanes. Snow plows vary in shape  
25 and size and may have difficulty negotiating portals.

## 26 E.2.4 Opportunities

27 The portals can be coordinated and integrated with other equipment.

28 Shared conduit trenching with other CBP technologies may be appropriate, but must maintain a minimum 6"  
29 of separation for power and data conduits.

30



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### 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.



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1 The internal dimensions of the building or canopy shall be minimum 140' long by 60' wide. A 5' buffer shall  
2 be available around the exterior of the building/canopy to allow placement of radiation shield walls as  
3 necessary. The thickness of the shield wall depends on the energy of the system and may be required to be  
4 20" to 30" thick. High density concrete may be supplemented with other shielding, such as steel plates.  
5 Interior vertical clearance shall be a minimum of 28' above the finished floor. No lighting fixture or  
6 component shall be installed below the 28' clearance required. Adequate lighting shall be provided to allow  
7 the gantry operation on a 24-hour basis, with a minimum of 70 foot-candles at the inspection area. There  
8 shall be no skylights or windows in the building. Bird netting shall be installed. Options for roof shielding  
9 and 1' minimum thick rolling concrete shield doors at the truck ingress and egress shall be considered by  
10 the FOF PMO PM in consultation with the OFO NII and DNDO PMOs.

11 Buildings shall include adequate exhaust systems to meet local codes for air exchange to remove commercial  
12 vehicle diesel exhaust. Buildings shall have two garage-type roll-up doors for truck ingress and egress. The  
13 door dimensions shall be a minimum 15' wide by 16.5' high. The door location shall be off-set 15' from one  
14 side wall and 30' from the other side wall. The gantry can be oriented in either direction based upon  
15 radiation safety considerations. The direction of the door offsets shall be coordinated with the ITB (FOF  
16 PMO PM shall consult with the OFO NII PMO) during the design development phase. A total of two  
17 personnel doors shall be located on the building; one door on each 15' section of end wall. The 5' buffer  
18 outside the door exit can be used by the vendor to install concrete vestibules, as deemed necessary for  
19 radiation protection.

20 The floor, internal to the building, shall be left unfinished for subsequent installation by the selected gantry  
21 vendor. This is necessary because floor thickness and flatness, gantry track layout, conduit runs internal to  
22 the building, and drainage runs internal to the building are vendor specific. The design and installation of  
23 all utilities external to the building (power, communications, data, storm water, etc.) are the responsibility  
24 of the cargo facility operator's (CFO) architect/engineer (A/E) and general contractor, with those utilities  
25 terminated at a location internal to the building as coordinated with ITB.

26 In addition to the scan area, there are requirements for a driver's waiting area and a 20'x10' control room  
27 for gantry operations. The waiting area and control room shall be placed a minimum of 10' beyond the exit  
28 end of the scan facility and a minimum 10' from the outer edge of the driver's side of the scan facility. The  
29 driver's waiting area shall include at a minimum a "bus-type" weather shelter for the southern border and  
30 an enclosed climate-controlled area for the northern border. The waiting area shall be visible from the  
31 control room by line of sight. The 10'x20' control room shall include adequate space and shelving for two  
32 computer systems, camera television and joystick, computer racks, etc., for each gantry system. There  
33 should be no travel or by-pass traffic lanes located between the scan facility and control room. On the  
34 northern border, a covered walkway shall be provided for officer and driver access to/from the scan facility  
35 to control room and waiting area.

36 The radiation control area for the gantry system is 140'x60'. As determined by CBP (FOF PMO PM shall  
37 consult with the OFO NII and DNDO PMOs), Wall Section Option 2B as presented on sheet NII-A-08 of the  
38 Enclosed NII Building shall be installed as part of the port project to maintain the radiation control area. If  
39 Wall Section Option 2B is not selected, then a 5' buffer around the 140'x60' area is necessary to allow vendor  
40 installation of shield walls if necessary. Due to potential subsurface constraints following the NII building  
41 installation, an adequate foundation to support a 30" thick, 24' tall concrete shield wall must be installed  
42 within the 5' buffer as part of the cargo facility design and construction. The foundation support requires



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1 adequate conduit runs and drains through the footers. Details of the conduit and drainage shall be  
2 coordinated with the ITB. The building structure shall have sufficient structural integrity so that the shield  
3 walls, if required, can tie into the building structure for lateral support.

### 4 B. Installation

5 The cargo facility design and construction of the scan building or canopy shall include shield walls via wall  
6 section option 2B, or if wall section option 2B is not selected, then foundation for shield walls around the  
7 scan building; the control room; the driver's waiting area; and all utilities external to the scan building, as  
8 well as termination of utilities through the shield wall footers to a location internal to the scan building.

9 The gantry vendors shall complete utilities internal to the scan building; install the concrete floor internal  
10 to the scan building; install the gantry system, including rails; install system-specific light curtains,  
11 interlocks, cameras, etc., internal to the scan building; furnish the interior of the control room with the  
12 system-specific computer hardware; and install additional radiation shield walls as necessary.

### 13 C. Power and Data

14 The system requires 480V, 600A three-phase power. Terminate power to a disconnect switch that allows  
15 the vendor to tap into it for distribution to their equipment. At least one spare 4" conduit for power shall be  
16 installed and terminated in the scan building.

17 Two 4" and two 2" communication/data conduits shall be installed from inside the scan facility to the control  
18 room. Two 4" and two 2" communication/data conduits shall be installed from the control room to the cargo  
19 facility. Two 2" conduits shall be run from the scan facility to the control and to any RPM located within  
20 500' of the scan building for potential use for the RPM blanking. Designer shall coordinate with CBP (FOF  
21 PMO PM shall consult with the OFO NII and DNDO PMOs).

### 22 E.3.3 Challenges/Limitations

#### 23 A. Compatibility with Other Equipment

24 The high-energy systems can be placed side-by-side with proper radiation shielding. High-energy and empty  
25 truck portal equipment shall not be placed side-by-side. For high-energy equipment, a minimum separation  
26 of 500' or greater will be required. The exact distance shall be confirmed with manufacturers of both pieces  
27 of equipment and the OFO NII and DNDO PMOs.

#### 28 B. Climate

29 The high-energy gantry systems are designed to withstand temperatures ranging from -40°F to 140°F. The  
30 climate-controlled portions of the gantry system are generally for the health and safety of CBP officers in  
31 the control room.

### 32 E.3.4 Opportunities

33 Systems can be coordinated or integrated with other equipment.





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1 Placement of the control room within a larger NII operations building is allowable. Canopies and scan buildings  
 2 shall be constructed to allow expansion or attachment of a second building for the potential placement of a  
 3 second, adjacent NII system.

### 4 **E.4 HIGH-ENERGY MOBILE**

#### 5 **E.4.1 Overview**

##### 6 **A. System or Component Operation**

7 When available, CBP deploys a high-energy mobile NII system is employed by CBP in secondary inspection  
 8 areas to scan commercial tractor-trailers that may be fully loaded with cargo or other selected conveyances.  
 9 This is an X-ray system that is generally self-contained with the source, detector, and officer's control room  
 10 all mounted on a full-size truck chassis. The X-ray system source is located in the truck, and a boom that  
 11 mounts the detectors extends out from the truck to encompass or surround the target vehicle. System/truck  
 12 dimensions are about 40' long, 10' wide, and 13.5' tall in the stowed position; and 40' long, 29' wide, and 17'  
 13 in the operational configuration with boom deployed. Designers shall confirm exact dimensions with the  
 14 system manufacturer. Figure E-4 shows a sample high-energy mobile NII.

15 Traffic flow is managed with signage, ground markings, and officers. The target vehicle is parked; the driver  
 16 must exit the vehicle prior to scanning operations. The mobile unit scans vehicles or commercial loads while  
 17 moving the length of the target vehicle. Scanning operations can be completed one tractor trailer at a time  
 18 (single scan) or multiple tractor trailers can be placed in a line for a continuous scan (line scan). Inside the  
 19 system there are two officers, the system driver, and the system operator. The system operator analyzes the  
 20 images, and radios to the ground officer for truck release or referral to subsequent intensive inspection.



21  
 22 **Figure E-4. Example of High-Energy Mobile NII**

23



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### 1 B. Application to Cargo Facilities

2 High-energy mobile systems are deployed at ports with stationary NII limitations and that have a moderate  
3 to high level of laden truck traffic. The high-energy systems are useful for the NII of dense cargo.

#### 4 E.4.2 Technical Requirements

##### 5 A. Location and Space

6 The radiation control area, the 0.05 mREM per hour boundary, for a mobile system is 170' long (parallel to  
7 truck) and 140' wide (transverse to truck) for the scan of a tractor and trailer that is 75' in length. During  
8 line scans, the radiation control zone is lengthened by an amount equal to each tractor trailer length plus a  
9 10' separation for each tractor trailer. Typically, 100' or more of the radiation that is emitted that is  
10 transverse to the truck extends down-gradient from the source, while less than 40' of the transverse  
11 radiation is up-gradient of the source.

12 There are various techniques for the placement of a mobile unit, which mainly depend on the radiation  
13 control area, scan type (single or line), and available area. Techniques include:

- 14 • An evaluation of site-specific land-use conditions to take advantage of an operational scenario that  
15 allows the bulk of the transverse radiation to emit out across an undeveloped, on-port area that is  
16 controlled, marked, and never crossed by pedestrians, vehicles, etc.
- 17 • Locating the high-energy mobile system in a high-density traffic area. Systems may not be placed side  
18 by side with controlled areas touching, as the dose to that line would be 200 mREM per year (0.1 mREM  
19 per hour). Systems must be separated so that each system contributes no more than one half the  
20 allowable dose. As an example, the high-energy mobile systems are fielded side-by-side scanning away  
21 from each other. The driver's side distance to the controlled zone would be elevated from 15'-22' from  
22 each system or 44' between the systems. This does not consider any system interference. The transverse  
23 dimension of the radiation control area can be reduced by erecting shield walls. The longitudinal  
24 radiation dimension (parallel to truck flow) cannot be reduced due to operational constraints.

25 If shield walls are desired as components of the site-specific design to maximize usable space, then the shield  
26 walls shall trend parallel to the mobile system. The walls shall be constructed of high-density concrete, with  
27 dimensions as follows: 20–30" thick (depending on system), 12' tall, and a minimum 170' long for a single  
28 truck scan. The walls shall be placed 5' from the outside edge of a 40' scan lane (i.e., 50' separation between  
29 two shield walls). High-density concrete may be supplemented with other shielding, such as steel plates.  
30 Additional consideration for the height of the walls is to keep the canopy above the boom, which often  
31 extends 15' to 20' above ground level.

32 In addition to the above considerations, the following conditions apply. The mobile system is located in a  
33 secondary inspection/enforcement area that has adequate space for truck queuing and exiting. The mobile  
34 system area shall consist of a relatively flat surface (i.e., < 2% grade) that adequately drains away from the  
35 operations area.

36 Shelters for the officer and target vehicle driver are required and shall be located outside of the radiation  
37 control area. A "bus-type" weather shelter is suitable along the southern border, while a climate-controlled  
38 shelter should be provided for northern border operations.



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1 When a mobile system is deployed, sheltering of the mobile system is required for general protection of  
2 equipment and personnel from harsh weather conditions. On the northern border, the mobile system may  
3 be located within a building with radiant heat flooring to melt snow and slush. On the southern border, the  
4 mobile system shall be positioned under a canopy or within a building. The building or canopy shall be  
5 constructed to allow expansion or attachment of a second building for the potential placement of a second,  
6 adjacent NII system.

7 The internal dimensions of a building need to be a minimum 170' long and 50' wide for single scan  
8 operations. The longitudinal radiation dimension exists inside the building footprint; however, the  
9 transverse dimension requires shielding or emission across demarcated and controlled undeveloped land.  
10 The internal dimensions of a canopy require a minimum width of 50'; the length can vary with a general  
11 standard of 100'. In this case, the longitudinal radiation dimension will not exist inside the canopy footprint,  
12 and as such, it shall be adequately demarcated by ground paint and/or other devices. The transverse  
13 dimension requires shielding or emission across demarcated and controlled undeveloped land.

14 Interior vertical clearance for building or canopy shall be a minimum of 28' above the finished floor. No  
15 lighting fixture or component shall be installed below the 28' clearance required. Adequate lighting shall be  
16 provided to allow mobile operation on a 24-hour basis, with a minimum of 70 foot-candle at the inspection  
17 area. Buildings shall include exhaust systems to meet local codes for air exchange to remove commercial  
18 vehicle diesel exhaust. High-energy mobile systems operated within a building are likely powered by the  
19 facility's electrical system. As such, vehicle exhaust from the mobile system may be precluded from air  
20 exchange calculations. Roofing for both buildings and canopies shall be designed to accommodate roof vents.  
21 Buildings shall have two garage-type roll-up doors for truck ingress and egress. The door dimensions shall  
22 be a minimum 15' wide by 16.5' high. The location of the door openings is vendor-specific and shall be  
23 coordinated with ITB during design. Bird netting shall be installed.

24 A secure, enclosed facility for storage of the 40' long, 10' wide, and 13.5' tall unit is required. This facility  
25 shall be powered by the electrical system with 230V 120A 3-phase 60 Hz with a 5-pin connector and an  
26 additional closet for storage of maintenance supplies. This secure facility may be incorporated into the  
27 building or the canopy.

### 28 B. Installation

29 The cargo facility design and construction shall include the shelter for officers and the tractor trailer drivers;  
30 shield walls, if required; and a canopy or scan building. The mobile vendors are not responsible for installing  
31 the infrastructure for mobile systems.

### 32 C. Power and Data

33 The mobile systems operate by an on-board generator. The system can operate via 230V, 120A three-phase  
34 power with 5-pin connector, which shall be made available in the scan area and storage area. The system  
35 data and images are stored on the local CPU in the on-board control room with download and transfer of  
36 that data by CD, DVD, thumb-drive, or alternate device (i.e., there is no attempt to link data from the mobile  
37 unit by data line back to the port office, etc.).



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### 1 E.4.3 Challenges/Limitations

#### 2 A. Compatibility with Other Equipment

3 The high-energy systems can be placed side-by-side with proper radiation shielding. High-energy and empty  
4 truck portal equipment shall not be placed side-by-side. The minimum stand-off distance from an RPM and  
5 a next generation RPM is 150'. The exact amount must be confirmed in coordination with CBP. The FOF  
6 PMO PM shall consult with the OFO NII and DNDO PMOs.

#### 7 B. Climate

8 The facilities housing the high-energy mobile systems shall be designed for a temperature range from -40°F  
9 to 140°F. The climate control portions of the design system are for the health and safety of the CBP officers  
10 and equipment longevity.

### 11 E.4.4 Opportunities

12 Standardization is achieved by the guidelines presented and with construction, signage, and details listed in  
13 other sections of this standard. However, site specific conditions shall be evaluated for the most efficient  
14 deployment of a high-energy mobile system.

## 15 E.5 LOW-ENERGY FIXED SYSTEM FOR TRUCKS

### 16 E.5.1 Overview

#### 17 A. System or Component Operation

18 The low-energy fixed system for trucks and buses is a multi-view drive through NII system employed by  
19 CBP at cargo facilities. The system can be located at the primary or secondary inspection areas to scan  
20 trucks. The systems have and will be periodically tested comprehensively and certified safe, at the CFO's  
21 expense, for drivers and passengers to remain in the truck during the scanning process. The system consists  
22 of an arch-like structure spanning a traffic lane with three imaging modules, two on either side and one on  
23 the top. Future modifications to this system will likely include a fourth imaging module to allow scanning  
24 from the bottom. An integrated LPR is optional with the system and will be determined by CBP. The  
25 structure is protected by a height and width gauge, bollards, with signage, cameras, and a stoplight mounted  
26 onto the system to process traffic flow. The operations of the Z-Portal are managed by an officer with a  
27 computer, from within the operator's booth, located next to the system.

#### 28 B. Application to Cargo Facilities

29 The system is applicable to cargo facilities and is best suited for ports that have a moderate to high level of  
30 truck traffic. The system is useful for identifying organic material that may be hidden in fenders, tires,  
31 trunks, gas tanks, under the hood, and cargo holds.



Figure E-5. Example of Low-Energy Fixed NII for Trucks

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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



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1 vehicle lengths before the system. The enclosure building exterior must match and be compatible with the  
2 architectural features and design of other buildings of the Cargo Facility.

3 The location of the system area should consist of a flat concrete surface with no overhead obstructions. The  
4 equipment footprint is approximately 29' x 9'. A service access area on either side of the system should also  
5 be free from permanent obstructions. Additional area is required for protection, sensors, and camera  
6 bollards. Adequate turn radii should be considered into and out of the system. An additional 10' is required  
7 on the ingress side and 20' is required on the egress side of the system for sensor bollards.

8 The typical layout of the system includes the scan system and operator's booth. The operators console must  
9 be within 200' of the scan system and shall offer a clear view of system operations. In addition, a total of  
10 two shelters for the CBP officers shall be located outside of the radiation control area (one shelter at system  
11 ingress and one shelter at system egress). Climate-controlled shelters should be provided for northern and  
12 southern border operations. Power of 110V 20A 60Hz or 220v 10A 50Hz is required in the operator booth  
13 for the system control computers.

14 The radiation control area for the system is confined to the area within the scan tunnel as well as 10' in  
15 front of and behind the tunnel while the system is in operation. There are no requirements for ancillary  
16 radiation shielding of the system.

17 The operation of the scan system is controlled by the officer with a computer in the adjacent operator booth.  
18 The interior size of the operator's booth shall have a minimum work surface area of 2'x8'.

19 Please contact the ITB (FOF PMO PM shall consult the OFO NII and DNDO PMOs) for more detailed site  
20 interface drawings.

### 21 B. Installation

22 The design and construction of the low-energy fixed system shall include:

- 23 ● Site survey (including geotechnical and topographic data).
- 24 ● Architectural and engineering design/build for system foundation.
- 25 ● Installation of equipment.
- 26 ● Operators booth (if required) with appropriate furnishings.
- 27 ● System hardware and software.
- 28 ● Integrated license plate reader.
- 29 ● Vehicles gauge (height and width).
- 30 ● Protective bollards.
- 31 ● Vehicle guide rails.
- 32 ● DHS approved vendor.

### 33 C. Power and Data

34 The system requires 230 VAC nominal +/- 10%, 60/50 Hz, 45 kVA, 3 phase power. This assumes clean,  
35 conditioned power is brought to the local power disconnect within 10' of the system and to a breaker box  
36 mounted on the scan system. Power must enter the system in the right imaging module from the entrance  
37 side. Underground conduits must be used. At least one spare 4" conduit for power shall be installed and  
38 terminated near the scan system. Two 4" and two 2" communication/data conduits shall be installed from



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1 the control room to the cargo facility. Contact ITB for system-specific conduit details, including conduit runs  
2 from the scan system to the operator booth.

### 3 **E.5.3 Challenges/Limitations**

#### 4 A. Compatibility with Other Equipment

5 The exact stand-off distance from the low-energy fixed system to an RPM or next generation RPM system  
6 should be reviewed by CBP (FOF PMO PM shall consult the OFO NII and DNDO PMOs) and the RPM  
7 manufacturer.

#### 8 B. Climate

9 The low-energy fixed system is designed to withstand temperatures ranging from 0°F to 115°F and rain,  
10 snow, wind, and blowing sand. Canopies over the scan system are recommended in temperatures greater  
11 than 115°F.

12

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14