

FACILITIES CRITERIA (FC)

NAVY AND MARINE CORPS FIRE STATIONS



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FACILITIES CRITERIA (FC)

NAVY AND MARINE CORPS FIRE STATIONS

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U.S. ARMY CORPS OF ENGINEERS

NAVAL FACILITIES ENGINEERING COMMAND (Preparing Activity)

AIR FORCE CIVIL ENGINEER CENTER

Record of Changes (changes are indicated by \1\ ... /1/)

Change No.	Date	Location

This FC supersedes UFC 4-730-10, dated June 2006 and Final Draft UFC 4-730-10, dated February 2009.

FOREWORD

Facilities Criteria (FC) provide functional requirements (i.e., defined by users and operational needs of a particular facility type) for specific DoD Component(s), and are intended for use with unified technical requirements published in DoD Unified Facilities Criteria (UFC). FC are applicable only to the DoD Component(s) indicated in the title, and do not represent unified DoD requirements. Differences in functional requirements between DoD Components may exist due to differences in policies and operational needs.

All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (HNFA), and in some instances, Bilateral Infrastructure Agreements (BIA.) Therefore, the acquisition team must ensure compliance with the most stringent of the UFC (replace w/ FC), the SOFA, the HNFA, and the BIA, as applicable.

Because FC are coordinated with unified DoD technical requirements, they form an element of the DoD UFC system applicable to specific facility types. The UFC system is prescribed by MIL-STD 3007 and provides planning, design, construction, sustainment, restoration, and modernization criteria, and applicable to the Military Departments, Defense Agencies, and the DoD Field Activities. The UFC System also includes technical requirements and functional requirements for specific facility types, both published as UFC documents and FC documents.

FC are living documents and will be periodically reviewed, updated, and made available to users as part of the Services' responsibility for providing criteria for military construction. Headquarters, U.S. Army Corps of Engineers (HQUSACE), Naval Facilities Engineering Command (NAVFAC), and the Air Force Civil Engineer Center (AFCEC) are responsible for administration of the UFC system. Defense agencies should contact the preparing service for document interpretation and improvements. Technical content is the responsibility of the cognizant DoD working group. Recommended changes with supporting rationale should be sent to the respective service proponent office by the following electronic form: [Criteria Change Request](#). The form is also accessible from the Internet site listed below.

FC are effective upon issuance and are distributed only in electronic media from the following source:

- Whole Building Design Guide web site <http://dod.wbdg.org/>.

Refer to UFC 1-200-01, *General Building Requirements*, for implementation of new issuances on projects.

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**FACILITIES CRITERIA (FC)
NEW DOCUMENT SUMMARY SHEET**

Document: FC 4-730-10N, Navy and Marine Corps Fire Stations

Superseding: UFC 4-730-10, Fire Stations, dated 15 June 2006 and Final Draft UFC 4-730-10, Fire Stations, dated February 2009

Description of Changes: The following significant changes were made in this FC revision:

- This FC separates the consolidated Tri-Service version and replaces the Final Draft Fire Stations UFC version used by the Navy, into a Navy- and Marine Corps-only FC version for Fire Stations criteria.
- Chapter 3, General Design Criteria, was reworked to incorporate new standard FC paragraphs and to be more consistent with other facility UFCs.
- In Chapter 4, Specific Design Criteria, the breakdown between built-in fixtures and furnishings, fixtures and equipment (FF&E) was refined and a category added for "user-provided FF&E" (typically not part of contract).

Additional minor editorial and formatting changes were made to enhance clarity and readability and to comply with the most recent version of UFC 1-300-01.

Reasons for Changes: The FC has been changed for the following reasons:

- Facilitate the application of this document to design-build projects and to coordinate with the new Navy Model Design-build RFP.
- Correct errors and outdated material and references.

Impact: The following improvements should result from this revision:

- This FC updates and clarifies the basic requirements for Navy and Marine Corps fire stations. This FC will reduce the initial cost of design and reduce costs associated with redesign of facilities that do not meet minimum standards.
- The improved performance-based criteria and coordination with the model RFP (Navy) should reduce design-build proposals. Responders will be able to apply industry best-practices and more creativity to their proposals to reduce costs while still meeting the minimum technical design and construction standards outlined in Chapters 3 and 4.

Unification Issues: None.

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CHAPTER 1 INTRODUCTION

1-1 SCOPE OF DOCUMENT.

This FC provides requirements for evaluating, planning, programming, and designing Navy and Marine Corps Fire Stations. The information in this FC applies to the design of all new construction projects, to include additions, alterations, and renovation projects in the continental United States (CONUS) and outside the continental US (OCONUS). This FC is not intended as a substitution for thorough review during design by individual Program Managers and Operations Staff in the appropriate Service.

This FC does not apply to the design or construction of deployment, contingency, or field operating facilities.

1-2 APPLICABILITY.

This FC applies to all military service elements and contractors involved in the planning, design, and construction of Navy and Marine Corps fire stations worldwide.

1-3 GENERAL BUILDING REQUIREMENTS.

Comply with UFC 1-200-01, *General Building Requirements*. UFC 1-200-01 provides applicability of model building codes and government-unique criteria for typical design disciplines and building systems, as well as for accessibility, antiterrorism, security, high performance and sustainability requirements, and safety. Use this FC in addition to UFC 1-200-01 and the UFCs and government criteria referenced therein.

1-4 SCOPE OF FACILITY.

Fire Stations support Military firefighters' mission to provide fire protection to Installation flightlines and facilities and fire prevention education and training. This FC does not apply to deployment, contingency, or field operating facilities.

When the fire station function is part of a consolidated operations facility (fire/police/safety), the criteria in this FC is applicable only to the fire station functions and must be applied carefully in order to integrate with other facility functions. Identify common support/administrative spaces that can be shared to improve efficiency.

1-4.1 Types of Stations.

Functionally, there are three types of Fire Stations:

- Structural Stations provide fire protection to facilities,
- Aircraft Rescue Firefighting (ARFF) Stations provide fire protection to flightlines and aircraft, and
- Combination Structural/ARFF Stations.

To support the firefighters' mission, it is crucial that the design of all fire stations accommodate the equipment, the numerous unique functional requirements, and the

safety of the firefighting personnel. Generally, the differences between Structural and ARFF stations are limited to the Apparatus Bay size criteria (see Chapter 2 section titled “Critical Space Drivers” for more on these differences) and the facility location determinants (see Chapter 2 section titled “Location Determinants”).

The **Marine Corps** program includes two separate organizations—one for Structural and one for ARFF. Unlike the other Services, the Marine Corps rarely combines the stations and requires separate offices for Fire Chiefs and other personnel on their Installations.

1-4.2 Classes of Stations.

Irrespective of type, there are two classes of Fire Stations:

- Headquarters (or Main) stations generally house the Fire Chief and most of the general administrative functions,
- Satellite stations are located throughout the Installation to provide adequate response time coverage, as appropriate, and

The differences between Headquarters and Satellite stations relate only to the additional administrative functions housed in the Headquarters station. Both Headquarters and Satellite stations may be Structural, ARFF, or Combination stations.

1-5 USERS OF FACILITY.

Not all of these personnel will be located in every Fire Station, but generally, all of the following individuals will be present in at least one Fire Station per Installation:

- Fire Chief,
- Deputy Fire Chief,
- Assistant Chief/Shift Supervisor,
- Firefighters,
- Inspectors,
- Training Officers (may be located outside of a Fire Station),
- Fire Prevention Officers (may be located outside of a Fire Station),
- Hazardous Materials (HAZMAT)/Safety Officer,
- Logistics Officer,
- Administrative Assistant, and
- Reserve Firefighters

1-6 RELATED DOCUMENTS.

The following documents provide additional information relevant to the design of military Fire Stations:

- DoD Instruction 6055.06, *DoD Fire and Emergency Services Program*,
- Department of Homeland Security, U.S. Fire Administration, FA-168, *Safety and Health Considerations for the Design of Fire and Emergency Medical Services Stations*,
- NFPA 1500, *Fire Department Occupational Safety and Health Program*, and
- NFPA 1581, *Fire Department Infection Control Program*.
- NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Serviced Communications Systems*.
- UFC 2-000-05N (P-80), *Facility Planning Criteria for Navy/Marine Corps Shore Installations*

Refer also to the following Service-specific related documents:

- **Navy.** UFC 4-021-02, *Electronic Security Systems*.
- **Marine Corps.** Marine Corps Order (MCO) P11000.11B, *Marine Corps Fire Protection and Emergency Services Program*.

1-7 REFERENCES.

Appendix A contains a list of references used in this document. The publication date of the code or standard is not included in this document. In general, the latest available issuance of the reference is used.

1-8 GLOSSARY.

Appendix B contains acronyms and abbreviations.

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CHAPTER 2 PLANNING AND LAYOUT

2-1 SIZE DETERMINANTS.

Several factors determine the size of the facility.

2-1.1 General.

Generally, the size of the station depends on the class of station, the number of companies housed, the number and types of vehicles housed, and any additional spaces required.

The class of station will partially drive the number of spaces required. However, depending on what is currently available on the Installation, some spaces normally reserved for Headquarters stations may be provided in Satellite stations. The Installation representatives, in conjunction with the program manager, must decide which spaces should be provided.

2-1.2 Needs Validation Assessment.

Conduct a Needs Validation Assessment to determine the class and required capacity in terms of personnel and vehicles of the new or renovated station.

2-1.3 Types of Spaces.

For a complete list of spaces, see Table 2-1. Fire Station functional spaces fall into three main categories:

2-1.3.1 Maintenance and Apparatus.

This includes the Apparatus Room which houses the firefighting vehicles and the supporting maintenance spaces. The maintenance spaces include both vehicle maintenance and storage and equipment maintenance and storage (fire extinguishers, self-contained breathing apparatus (SCBA), protective clothing, hoses, and firefighting agents)

2-1.3.2 Administration and Training.

This includes the appropriate offices, training spaces, dispatch areas, and administrative areas.

2-1.3.3 Residential and Living.

This includes the on-duty firefighters' bedrooms, toilets/showers, kitchen/dining, recreation, and "living room" areas.

2-1.3.4 Other Spaces.

Other spaces that don't readily fit into the three categories include the following:

- Emergency Operations Center situation room, if required by Installation mission.
- Host nation employee dayroom as mandated by Master Labor Contracts (MLC) or Status of Force Agreements (SOFA).

TABLE 2-1. FIRE STATION PROGRAM SPACES

Space	Notes
Maintenance and Apparatus	
Apparatus Room/Bays	Made up of bays—either single- or double-length bays. Sized according to truck modules: See Chapter 2, “Apparatus Bays”.
Personal Protective Equipment (PPE) Gear Storage	One per station.
Hose Storage	One per station.
SCBA Compressor Room	At least one per department.
SCBA Maintenance	One per department.
Protective Clothing Laundry	One per station.
Equipment Wash/Disinfection	One per station.
Work Room/Equipment Maintenance	One per station.
Vehicle Maintenance Equipment Storage	One per station. Tools and minor parts.
EMT Storage (basic first aid supplies)	One per station.
Medical Storage Cabinet/Locker (drugs and needles)	One per station. Lockable. This may be combined with or a sub-space of the EMT Storage Room.
HAZMAT/CBRNE Equipment Storage	One per department. (CBRNE = Chemical, Biological, Radiological, Nuclear, Explosive.)
Agent Storage	At least one per department.
Spare Gear Storage	At least one per department.
Fire Extinguisher Maintenance and Storage	One per department, as dictated by Installation mission requirements.
Flightline Fire Extinguisher Maintenance and Storage	One per department.
Vehicle Maintenance Bay	Addition to Apparatus Room, as dictated by Installation mission requirements.
Vehicle Maintenance Office	As dictated by Installation mission requirements if Vehicle Maintenance Bay is provided.
Reserve and Active Duty Mobility/Deployment Gear Storage	As dictated by Installation mission requirements.
Administration and Training	
Station Officer Office	One per station.

TABLE 2-1. FIRE STATION PROGRAM SPACES

Space	Notes
Watch Desk	One per station only if no Dispatch in station and then made part of Station Officer Office. (Receives calls from Dispatch.)
Fire Chief Office	One per department.
Chief's Conference Room	One per department. May be a part of the Fire Chief's Office.
Deputy Chief Office	The requirement for a Deputy Chief is driven by the size of the department.
Administrative Assistant	Provided only in conjunction with Chief and Deputy Chief.
Lobby Area	Generally provided only in conjunction with Chief and Deputy Chief.
Assistant Chief/Shift Supervisor	One per department.
Assistant Chief of Fire Prevention	One per department, as dictated by Installation mission requirements.
Inspector(s) Offices	Several workstations per department—may be located in several stations.
EMS Office	Space for EMS to complete confidential paperwork, as dictated by Installation mission requirements.
HAZMAT/Safety Office	One per department.
Logistics Office	One workstation per department, as dictated by Installation mission requirements.
Department Training Room	At least one per department (in HQ station). May be provided in other stations, as dictated by Installation mission requirements.
Training Officer Office	One per department.
Computer Training/testing Area	One per station. Separate room or alcove.
General Admin Storage	One per station.
Fire-only Dispatch	One per department; provided only if no requirement for Consolidated Dispatch. Dispatch receives emergency calls from the public.
Consolidated Dispatch	Provided in lieu of Fire-only Dispatch. Combines fire, security, and medical dispatch functions.
Dispatch Supervisor	Provided in conjunction with Consolidated Dispatch.
Dispatch Bathroom	Dedicated facilities close to Dispatch.
Dispatch Kitchenette	Dedicated facilities close to Dispatch.
Information Technology (IT) Room	One per station. Consider presence/size of dispatch and/or watch room in size and location of room.
Generator Space	One per station. May need to be located inside as a security concern.
Residential and Living	
Day/Training Room	One per station. Includes kitchen, training/dining, and lounge areas. The station training area is incorporated as part of the dining portion of the Day Room.
Dorm Rooms	Per station. Quantity depends on number of crews.
Bathrooms/shower/changing	Male and female facilities per station.
Fitness Room	One per station.
Laundry Room	One per station.

TABLE 2-1. FIRE STATION PROGRAM SPACES

Space	Notes
Recreation Room	Addition to Day Room for noisier activities such as games, as dictated by Installation mission requirements.
Covered Outdoor Patio	One per station.
Other Spaces	
Vending	For use by both firefighters and staff.
EOC Situation Room	Conference room, as dictated by Installation mission requirements.

2-2 SPACE PROGRAM.

The space program for Fire Stations is developed through the use of an interactive worksheet. It is completed by first entering the appropriate Service branch and then selecting the following: the type of station, the class of station, the number of companies to be housed/dorm room count, the number and class of vehicles to be housed, and the additional spaces required.

The selections vary depending on the Service branch selected. As selections are made, the program areas are calculated and summed for both the building and the site. The worksheet must be filled out in collaboration with the appropriate fire department representative(s).

This interactive worksheet is available as a downloadable Microsoft® Excel® file from the Whole Building Design Guide Web site (www.wbdg.org) under the DoD page, Unified Facilities Space Program Spreadsheets, located here: http://www.wbdg.org/references/pa_dod_sps.php.

2-2.1 Sample Worksheets.

Samples of the interactive worksheet may be found in Appendix C.

2-2.2 Critical Space Drivers.

To understand how the numbers in the interactive worksheet are calculated, several critical space drivers must be understood.

2-2.2.1 Apparatus Bays.

The apparatus bays are sized based on the class of truck to be housed. See Table 2-2 for a list of common truck types. These types have been classified as follows in order to standardize the size criteria:

- **Large.** These typically include structural aerial (ladder) trucks or large tanker trucks with lengths greater than 38 ft. (11.58 m). The standardized

footprint (floor space occupied by the truck, not considering the space around it) is 10 ft. by 50 ft. (3.05 m by 15.24 m).

- **Medium.** This class covers a wide range of vehicles from structural pumper trucks and smaller tanker trucks to rescue and HAZMAT trucks. Medium trucks have lengths between 30 and 38 ft. (9.14 and 11.58 m). The standardized footprint is 10 ft. by 38 ft. (3.05 m by 11.58 m).
- **Large ARFF (wide).** All ARFF trucks are distinguished by their generally greater width and may include heavy rescue or very large tankers. Large ARFF trucks have lengths greater than 38 ft. (11.58 m). The standardized footprint is 12 ft. by 50 ft. (3.66 m by 13.72 m).
- **Medium ARFF (wide).** Medium ARFF trucks are also distinguished by their generally greater width. They can vary in length from about 23 ft. (7.01 m) up to 38 ft. (11.58 m), but the standardized footprint is 12 ft. by 38 ft. (3.66 m by 11.58 m).
- **Small.** These typically include ambulances, small rescue or HAZMAT trucks, small brush units, and command vehicles. Small trucks have lengths less than 30 ft. (9.14 m). A separate vehicle bay size class is not designated for these trucks. Depending on the actual size of the Small class truck, it may be housed in its own bay or in a bay with another truck. For example, two 20-ft- (6.10-m-) long vehicles may be housed in a Large bay (either ARFF or not). The interactive worksheet makes a recommendation for the area of additional Apparatus Bays, as appropriate, for the quantity of Small vehicles indicated. However, this area must be carefully reviewed by the planning team to ensure it provides the correct space, accounting for the actual length of the Small vehicles anticipated and the space that may be available in other bays.

In addition to the truck footprint, the space program takes into account the space around the parked truck. This space varies depending on whether the truck is parked next to a wall or another truck. See Figures D-3.1 through D-3.4 for illustrations of these variations. The space program uses the middle-sized bay for each truck class to calculate an “average” sized bay for the given vehicle. Also see Table 4-1.0 for more information on the Apparatus Bays.

TABLE 2-2. COMMON TYPES OF VEHICLES AND THEIR SIZE CLASSES

Type of vehicle	Size Class of Vehicle (see Chapter 2, "Apparatus Bays")
Structural	
Pumpers	Medium
Telesquirts	Medium
Aerial/Ladders	Large
Tankers	Medium or Large
ARFF	
Large Water Tankers	ARFF Medium
ARFF Foam (vary from 1500 gal. (5700 L) up to 6500 gal. (24,600 L))	ARFF Medium or ARFF Large
Ambulance	
Ambulances	Small
Rescue	
Small/Light Rescue	Small
Medium Rescue	Medium
Heavy Rescue	ARFF Medium
HAZMAT	
HAZMAT Support/Small	Small
HAZMAT Squad	Medium
HAZMAT Squad	Large
Brush	
Small Brush	Small
Large Brush	Medium
Equipment Trailers	
Various equipment trailers that would be pulled by command or other vehicles	Small

2-2.2.2 Dorm Room Counts.

The worksheet uses two methods to calculate the number of dorm rooms needed (dorm room count). First, the user enters the number of Structural companies and the number of ARFF companies, as appropriate. (If it is a Structural station, ARFF companies are not permitted and vice versa.) Based on the branch of Service selected, the worksheet will calculate the number of dorm rooms from the number of companies. Second, the user adds or subtracts dorm rooms to accommodate ambulance companies, rescue companies, or cross-staffing of companies. The initial number of rooms plus or minus the modified number of rooms is the Final Dorm Room count.

Dorm room counts must be coordinated with the Fire Chief. See Table 2-3 for sample staffing by vehicle type. Cross staffed (x-staffed) vehicles are staffed on an as needed basis by personnel assigned to another vehicle or vehicles. X-staffed vehicles have no dedicated staff of their own. The sample vehicle staffing numbers shown in Table 2-3 do not represent staffing authorizations.

TABLE 2-3. SAMPLE STAFFING BY VEHICLE TYPE

Type of vehicle	Navy	Marine Corps
Structural		
Pumpers	4	4
Telesquirts	4	4
Aerial/Ladders	4	4
Tankers	1 or x-staffed	1 or x-staffed
ARFF		
Large Water Tankers	1 or x-staffed	1 or x-staffed
ARFF Foam	3	4
Ambulance		
Ambulances	2	2
Rescue		
Small/Light Rescue	3 or x-staffed	3 or x-staffed
Medium Rescue	3 or x-staffed	3 or x-staffed
Heavy Rescue	3 or x-staffed	3 or x-staffed
HAZMAT		
HAZMAT Support/Small	x-staffed	x-staffed
HAZMAT Squad	x-staffed	x-staffed
Brush		
Small Brush	x-staffed	x-staffed
Large Brush	x-staffed	x-staffed

2-2.3 Space Data.

The data upon which the interactive worksheet is based is illustrated in Appendix C. Do not use Appendix C to develop the space program—use only the interactive worksheet.

2-2.4 Total Area.

The space program developed through the use of the interactive worksheet serves as a guideline for the Fire Station planning team and generally represents the maximum space allowed. The final space program for a new Fire Station will need to be carefully determined by Installation representatives and the appropriate Service program office guided by the criteria in this FC. The space assessment and its related Basic Facility Requirement (BFR) calculation serves as the basis for the validated DD1391 which defines the total authorized space allowances for each project.

2-3 LOCATION DETERMINANTS.

Several factors determine the most appropriate and cost-effective location for a Fire Station.

2-3.1 Access/Response Time.

The most critical determinant for the location of a Fire Station is response time. Refer to DoD Instruction 6055.06, *DoD Fire and Emergency Services Program* to determine required response times. In addition to response time, accommodate access to the station by delivery vehicles, staff, and visitors.

Direct access and response time may conflict with tightening antiterrorism (AT) criteria—ensure that trucks will not have to cross access control points to reach a target structure or flightline.

Facility site should be prominent and easily visible from the target areas (structures or flightlines).

2-3.2 Size.

Provide adequate site space to accommodate the firefighting vehicular turning radii, personnel parking, visitor parking, storage requirements, and reserve vehicles (if applicable).

2-3.3 Elevation.

Due to the critical response capabilities required by Fire and Emergency Response units, select a site such that parking areas and driveways are located above the 100-year flood elevation.

2-4 COST.

Design these facilities with the objective of achieving the lowest life cycle cost over a 45-year period. To do so, the project's design program must adequately define the scope and performance requirements and match those needs against a budget. Conversely, the budget must adequately support an appropriate and high-quality program and the performance requirements outlined and identified in this FC.

2-5 LAYOUT AND ADJACENCIES.

As with the location determinants, the key internal adjacencies are driven by response time. The location of the residential and living areas must accommodate quick and clear access to the Apparatus Room for response in the event of an alarm. The appropriate layout and adjacencies are illustrated through a bubble diagram and a series of illustrative layout diagrams.

In HQ/Main Stations, coordinate the relationship between the administrative areas and the living areas with the users and program manager. There may be a desire to separate these areas to provide a sense of functional identity for each.

One-story Fire Stations are preferred. However, if necessary, some required adjacencies may be accommodated vertically. If a two-story solution is proposed, the dispatch and administrative areas must be placed on the first floor.

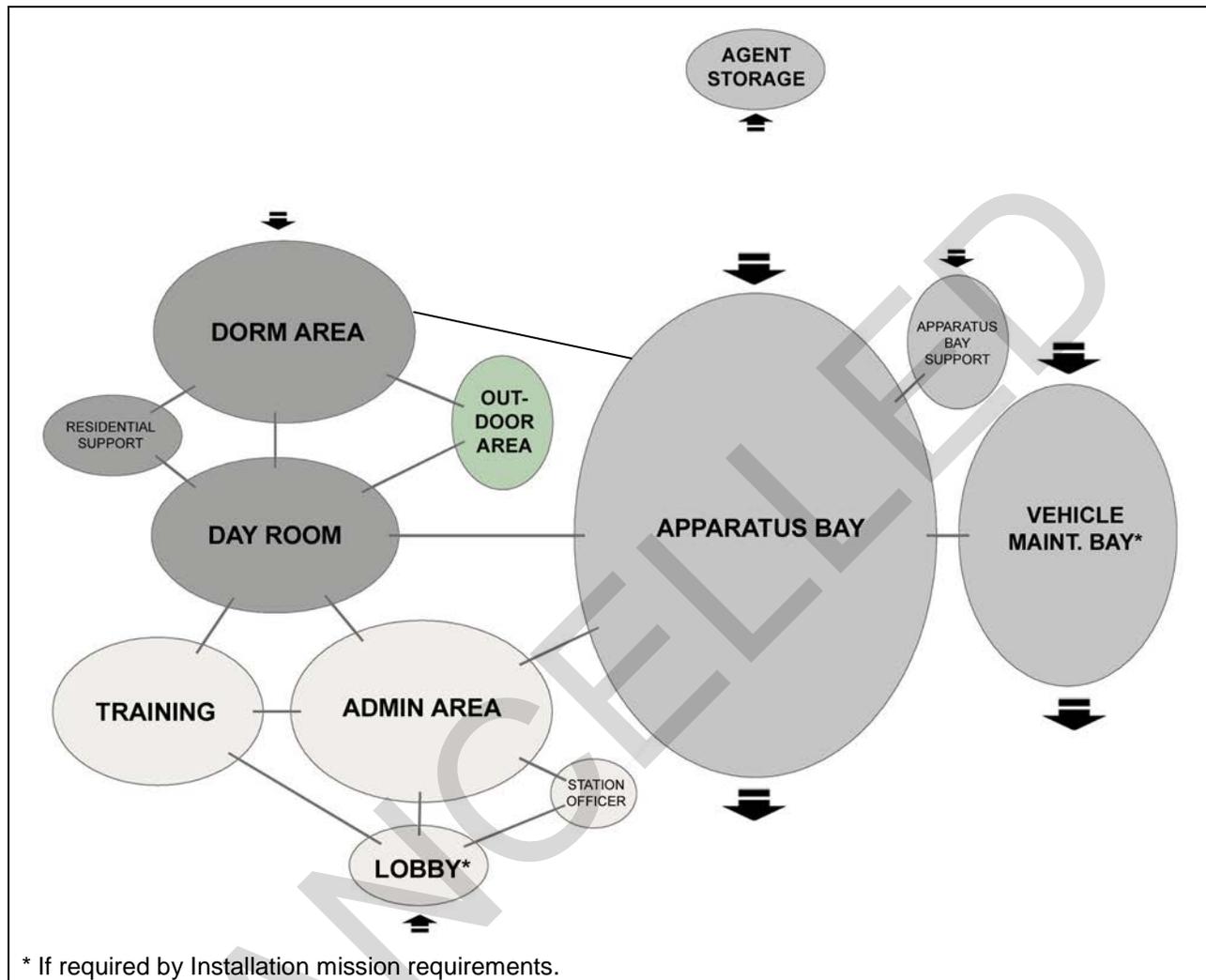
2-5.1 Functional Relationship Bubble Diagram.

The bubble diagram in Figure 2-1 indicates the acceptable relative adjacencies of the functional spaces. Some of these key adjacencies may be accommodated through a hallway rather than a direct entrance/exit from one space to another. This is particularly true with the Apparatus Room and the Day Room as many facility spaces need an adjacency with these two spaces.

Note that the “Apparatus Bay Support” area indicated in the diagrams includes the following spaces, some of which may not be included in every station, depending upon Installation mission requirements:

- SCBA Maintenance
- SCBA Compressor Room
- Work Room/Equipment Maintenance
- Equipment Wash/Disinfection
- Protective Clothing Laundry
- EMT Storage
- HAZMAT/CBRNE Equipment Storage
- Spare PPE Gear Storage
- Fire Extinguisher Inspection
- Fire Extinguisher Maintenance & Storage
- Flightline Fire Extinguisher Maintenance

FIGURE 2-1. FUNCTIONAL RELATIONSHIP BUBBLE DIAGRAM



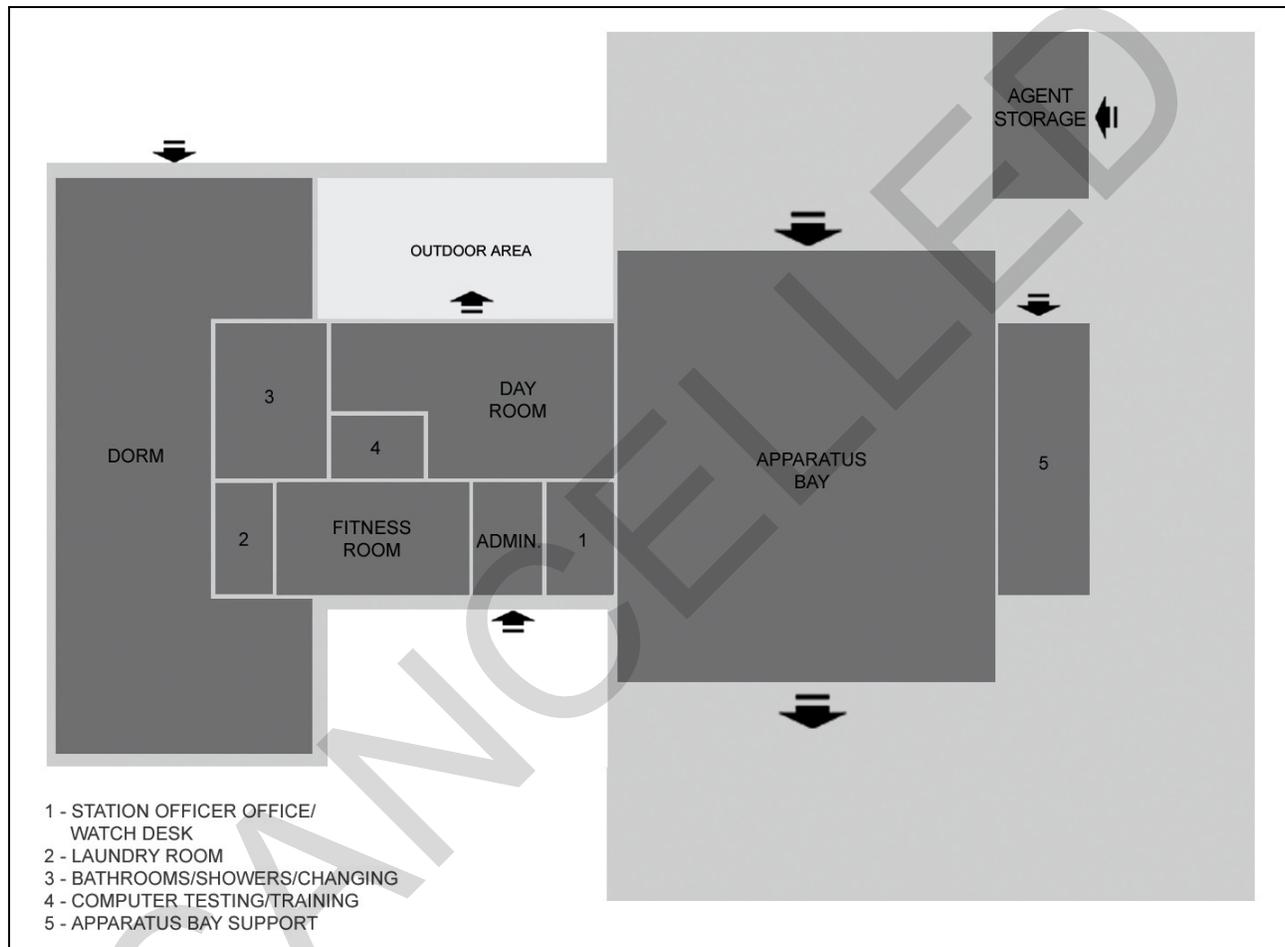
2-5.2 Illustrative Diagrams.

The illustrative diagrams include Figures 2-2 and 2-3. They do not represent mandatory or even suggested layouts but are provided to expand on Figure 2-1 and illustrate the relative sizes of the functional spaces along with the acceptable adjacencies. By including the relative sizes of the spaces, these diagrams convey a possible means to accommodate the needed adjacencies.

2-5.2.1 Small Satellite Station Adjacency Diagram.

Figure 2-2 illustrates a functional space adjacency diagram for a small, one- or two-company Satellite station.

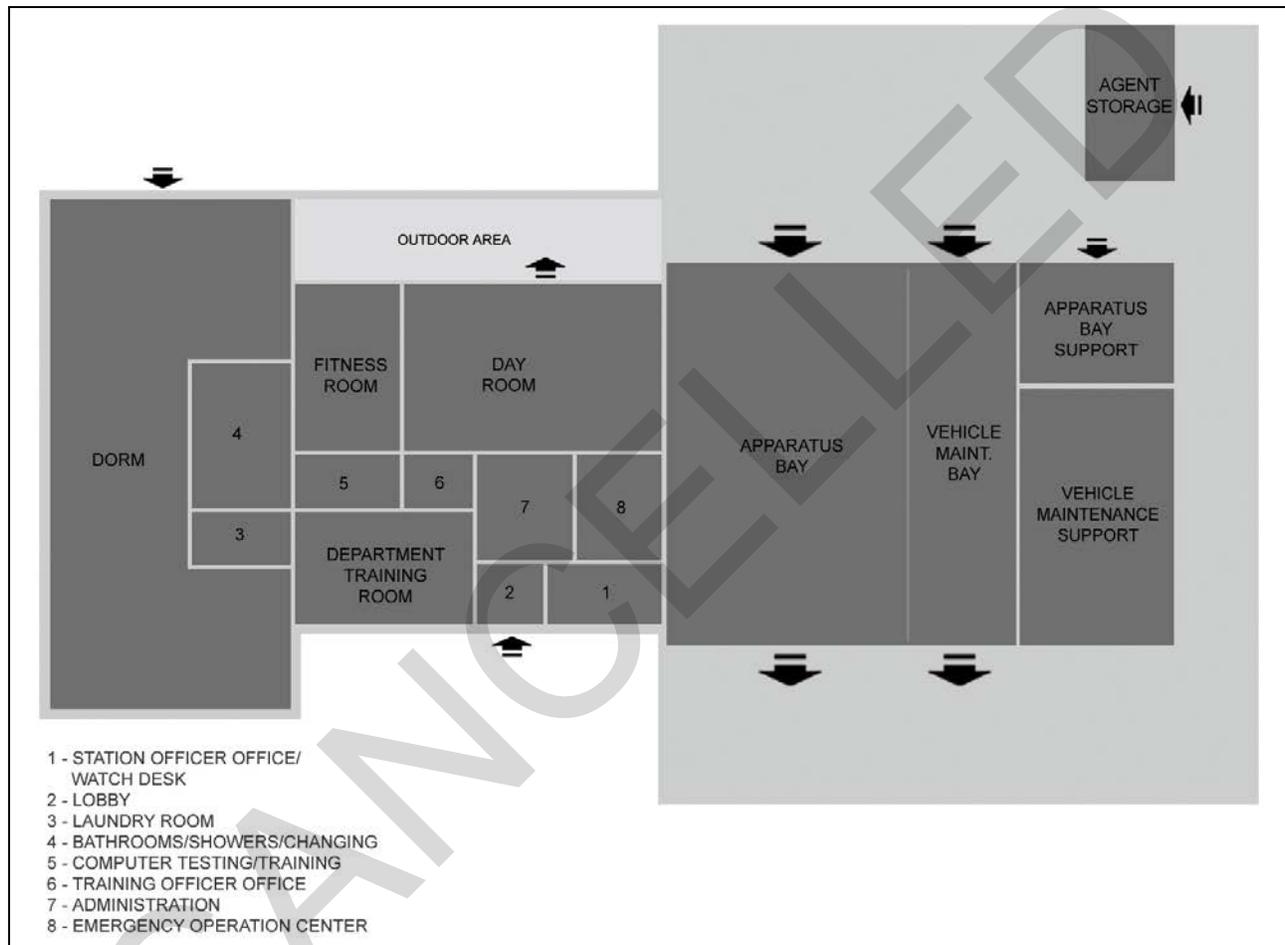
FIGURE 2-2. ADJACENCY DIAGRAM A – SMALL SATELLITE



2-5.2.2 HQ/Main Station Adjacency Diagram.

Figure 2-3 illustrates a functional space adjacency diagram for an HQ/Main station with larger administrative and training components.

FIGURE 2-3. ADJACENCY DIAGRAM B – HQ/MAIN STATION



2-5.3 Sample Floor Plans.

Sample floor plans further expand on these illustrative diagrams and can be found in Appendix D. These do not represent mandatory or even suggested floor plans. They are provided to illustrate possible means to accommodate the needed adjacencies. Note that the written criteria in this FC take precedence over the sample floor plans. If there is any confusion between the text and the floor plans, follow the guidance outlined in the text.

2-5.4 Space Assessment.

See the Functional Data Sheets in Chapter 4 for additional information on the space types and their relationships to each other.

2-6 ALTERATIONS TO EXISTING FACILITIES.

2-6.1 Regulatory Authorities.

Refer to the following for the appropriate authorities for each Service:

- **Navy.** Authorities are contained in OPNAVINST 11010.20G, *Facilities Projects Manuals* and NAVFACINST 11010.45, *Comprehensive Regional Planning Instruction*. Prior to planning alterations to an existing facility to convert it to a Fire Station, the activity should consult the following: CNIC, HQ NAVFAC Engineering and CNIC Fire & Emergency Services.
- **Marine Corps.** Consult with Headquarters Marine Corps LFF, LFL, and Marine Corps Installations Command G-3 (Fire & Emergency Services).

2-6.2 Other Considerations.

It is unlikely that a non-Fire Station facility would ever be converted to a Fire Station. However, should this need arise, ensure that the site and structure of the existing facility will accommodate the required functions. For instance, can the building accommodate the Apparatus Room? Does it have adequate site space for the vehicle turning radii? Whether planning a conversion, alteration, addition, or new construction, all the criteria in this FC must be met by the resulting facility.

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CHAPTER 3 GENERAL DESIGN CRITERIA

3-1 GENERAL.

References within this FC to applicable criteria and codes are intended to assist the designer in compiling the required statutes. These references are not intended to identify all those that may apply. It is the responsibility of the designer of record to identify and comply with all required statutes.

Use UFC 1-200-01, General Building Requirements, for applicability of model building codes and referenced government criteria. UFC 1-200-01 identifies through references, key unified facility criteria and requirements including accessibility, antiterrorism, security, sustainability, safety, discipline specific, and building systems. The design requirements in this FC are to be used in addition to UFC 1-200-01 and referenced UFCs and government criteria.

3-1.1 Authorized Building Program.

A DD1391 funding document is developed for all new construction projects which establishes the project requirements and authorized building size. The designer can use the functional diagrams contained herein to create the logical flow and individual space allocations for approved functions within the facility, however the design may not exceed the square footage allowances of the DD1391 or add functions in the facility if the functions are not authorized in the validated DD1391.

3-1.2 Accessibility.

Follow Accessibility provisions as stated in UFC 1-200-01.

3-2 SUSTAINABILITY.

Navy requirements for Sustainability apply to construction, redesign, renovation and modernization projects. Comply with UFC 1-200-02, *High Performance and Sustainable Building Requirements*.

3-3 STRUCTURE.

Refer to UFC 1-200-01 and comply with stated and cross referenced requirements for Structural Systems, *with the following additions and exceptions for this facility type*.

Clear spans are required for the Apparatus Bay. The facility is classified as Risk Category IV.

3-4 ARCHITECTURE.

Refer to UFC 1-200-01 and comply with stated and cross referenced requirements for Architecture, with the following additions and exceptions for this facility type.

3-4.1 Stories.

Single-story structures are preferred for Fire Stations. Site constraints may drive the need for multi-story structures. If a multi-story structure is required, ensure the appropriate adjacencies are maintained so that the required response times may be achieved. See the section in Chapter 2 titled "Layout and Adjacencies" for more information on the required adjacencies.

3-4.2 Exterior.

Design the exterior to comply with Command and Installation Appearance Plans (IAPs). Also consider the local geographical and cultural environment. The Fire Station should present a cohesive architectural image. Create an attractive, functional theme that applies to the entire facility design, from the overall exterior architectural statement to the specific interior design elements. Reinforce continuity of space by space planning, building form, elevation, materials, and details.

3-4.2.1 Entrances.

Clearly identify the main Fire Station entrance to discourage visitors from entering the facility through an open Apparatus Bay door. In cold climates, provide a canopy (or a recess) at required egress doors to ensure that doors can completely open without obstruction from snow and ice.

Provide separate entrances to the Dorm area and the Day Room.

3-4.2.2 Exterior Finishes.

Provide durable and low-maintenance exterior finishes. Coordinate the exterior finishes with the Service-specific design standards noted below under Interior Finishes.

3-4.3 Interior.

3-4.3.1 Counters, Casework, and Cabinets.

Counters, casework, and cabinets must be of high-quality and durable construction. Specify Architectural Woodwork Institute (AWI) Premium or Custom for finishes per *AWI Quality Standards Illustrated, Current Edition*. Casework, cabinet doors, and drawer faces should be provided as veneer panel core. Doors, drawers, and casework faces should be plastic laminate at a minimum. Countertops must be solid surface/solid composite plastics only. Specify .75-in. (20-mm) minimum thickness for plywood, plywood backing, and solid wood panels.

3-4.3.2 Interior Glass.

All interior glass must be tempered safety glass and mirrors must be constructed with break-resistant materials.

3-4.3.3 Interior Finishes.

Construction and finishes (walls, floor, and ceiling) must support the cohesive image and theme of the facility. Design the living areas of the facility, such as the Day Room and the Dorm Rooms, to reflect a residential, non-institutional character.

Durability is extremely important when specifying materials for interior construction and finishes. Fire Stations are occupied 24 hours per day, seven days a week and heavy equipment is regularly handled throughout the facility. These conditions will lead to greater interior damage being incurred compared to many other facility types. Select finishes that meet the requirements listed in NFPA 101, *Life Safety Code*. In moist climates, do not cover the inside of exterior walls with impervious materials such as mirrors or vinyl wall coverings. This is due to a concern over mold development in the wall.

For more information on finishes in specific areas, see the Functional Data Sheets in Chapter 4.

3-4.3.4 Acoustics.

Required sound transmission coefficient (STC) ratings for common building spaces are identified in UFC 3-101-01, *Architecture*. The STC ratings for spaces unique to fire stations are identified in Chapter 4, Functional Data Sheets.

3-4.3.5 Interior Signage.

Develop a comprehensive signage package that addresses both way-finding and definition of all spaces within the facility. Signage should reflect and complement the environment through colors, images and materials used.

3-4.3.6 Window Treatments.

All windows and other glazed openings to the exterior of the building must be provided with horizontal blinds or solar shading systems and are considered part of the construction project.

3-5 SERVICES.

3-5.1 Plumbing.

Design all building systems, such as domestic hot and cold water, sanitary and storm drainage, propane, fuel oil, or natural gas systems to meet the requirements of local Installation standards, and criteria established in UFC 1-200-01 and cross referenced requirements therein.

3-5.2 Heating, Ventilating, and Air Conditioning (HVAC).

Refer to UFC 1-200-01 and comply with stated and cross referenced requirements for HVAC Systems. Also comply with UFC 3-401-01, *Mechanical Engineering* and 3-410-01, *Heating, Ventilating, and Air Conditioning Systems*.

3-5.3 Fire Protection Systems.

Refer to UFC 1-200-01 and comply with stated and cross referenced requirements for Fire Protection Systems, with the following additions or exceptions for this facility type.

Fire Stations must be completely protected with automatic sprinklers. Comply with NFPA 1500 relative to facility safety criteria, as modified and clarified by the following specific requirements:

- Carbon Monoxide Detection. Provide carbon monoxide (CO) detection in all sleeping and living areas defined as the individual dorm rooms, the dorm room access hallway(s), and in the HVAC equipment room. Provide CO detectors as part of the fire alarm system, therefore, use a 24Vdc system CO detector connected to the fire alarm system. When the CO detector goes into alarm, use a separate pre-recorded message to provide the announcement: "Carbon Monoxide has been detected in the building. Please leave the building." If the fire reporting system has the capability, send a separate signal to the receiving center.
- Area Smoke Detection. Provide fire alarm system smoke detectors in the individual dorm rooms and the dorm room access hallway(s) only. Do not provide detection in the apparatus bay or other areas where exhaust fumes may be present. Activation of smoke detectors must sound a general building fire alarm.
- Exposure to Exhaust Emissions. Walls separating the residential and administrative portions of the building from the apparatus bay and maintenance spaces must be completely sealed to prevent passage of exhaust emissions and the resulting exposure to building occupants and contamination of spaces.

3-5.4 Electrical Design.

In addition to the criteria established in UFC 1-200-01 and the references therein, comply with the following Fire Station-specific requirements:

3-5.4.1 Lighting.

See Chapter 4, Functional Data Sheets, for light level and control requirements that are exceptions or in addition to the requirements referenced above.

3-5.4.2 Emergency Power.

Due to their required use in emergency response situations, provide 100% emergency generator back-up power for HQ/Main and Satellite stations.

3-5.4.3 Telecommunication Systems.

See Chapter 4, Functional Data Sheets, for outlet locations.

3-5.4.4 Television Systems.

See Chapter 4, Functional Data Sheets, for outlet locations.

3-5.4.5 Electronic Security Systems (ESS).

Design the ESS in accordance with UFC 4-021-02, *Electronic Security Systems*.

3-5.4.5.1 Access Control Systems.

Provide card readers with keypads at entries to building.

3-5.4.5.2 CCTV.

Provide the infrastructure for a CCTV system to meet operational requirements. The program manager will determine if design and construction funds will be provided for a complete and usable CCTV system.

CCTV cameras will be located to monitor the Apparatus Bays, Vehicle Maintenance Bay and the main entrance to the facility. CCTV monitors will be located at either the Watch Desk, or Dispatch if provided. See Chapter 4, Functional Data Sheets, for additional information.

3-5.4.6 Intercommunication Systems.

See Chapter 4, Functional Data Sheets, for locations.

3-5.4.7 Firefighter Alert System.

Provide simultaneous light and audible control for the following spaces when the firefighter alert system is activated: Dorm Room dedicated alert lights, corridor lights from Dorm Rooms to the Apparatus Bay, and the Apparatus Bay lights. See Chapter 4, Functional Data Sheets, for additional information.

3-6 FURNISHINGS, FIXTURES AND EQUIPMENT (FF&E).

Furnishings, Fixtures & Equipment (FF&E) items are listed for specific spaces in the Chapter 4, Functional Data Sheets. Soft window treatments such as draperies are considered collateral equipment and must be included in the FF&E package as required.

3-7 SITE WORK.

In addition to the criteria established in UFC 1-200-01 and the cross references included therein, comply with the following additions or exceptions for this facility type.

Organize the site to be compatible with the site planning and style of adjacent existing structures. Locate the building to reflect local climatic conditions. For example, provide protection from prevailing winds and glare and orient operable windows to take advantage of summer breezes. Locate the building to take advantage of passive solar heating and day lighting.

3-7.1 Landscaping.

Comply with UFC 3-201-02, *Landscape Architecture*, and the local Installation landscape standards. Accentuate main entrances to the facility with plant materials and specialty paving (precast concrete or brick pavers). Design must be low-maintenance oriented. The growth characteristics of selected plant material should be assessed when considering line of sight requirements to either flight pavements or facilities.

Because of the proximity to the flightline for ARFF facilities, select trees and shrubs that produce little or no debris. Avoid using plants that produce fruits or nuts that may attract unwanted animals and birds to the airfield environs.

3-7.2 Firefighting Vehicle Access Drives.

Ensure that dimensions and layouts of access roadways and service entrances accommodate specific vehicle types anticipated for fire station operations. Apparatus ramps must be concrete pavement and must be designed to support the anticipated vehicle weight.

Design the facility and site to permit drive-through Apparatus Bays unless restricted by the site and/or flightline.

If the vehicle access drives are sloped, either for drainage or due to the site profile, ensure that the slope angle is low enough to be easily navigated by the firefighting apparatus and that the driver can maintain good visibility of the area around his or her vehicle.

3-7.3 Parking and Other Access Drives.

Provide adequate parking based on the total positions assigned, including eight- and 24-hour shift positions, reservists (if appropriate), and visitors. If possible, access drives to staff and public parking should not cross the vehicle access drive out of the Apparatus Bay. Locate parking areas so they do not dominate the main entrance and public image of the facility.

Due to the critical response capabilities required by Fire and Emergency Response units, grade the site such that parking areas and access driveways are located above the 100-year flood elevation.

3-7.4 General Site Lighting.

Ensure that parking areas and the facility have adequate lighting for safety, evacuation, and security measures. If the facility is near a flightline, site lighting should not interfere with or be a distraction to aircraft movement at night.

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CHAPTER 4 SPECIFIC DESIGN CRITERIA

4-1 INTRODUCTION.

This chapter identifies the specific design needs for each functional area as outlined in the space program. Tables 4-1 through 4-31 provide this data in a standard Functional Data Sheet format.

The interior construction specialties, equipment and furnishings criteria provided in these tables are broken down as follows:

- Casework/Built-in Equipment. This includes anything physically attached or plumbed to the building such as counters, cabinets, casework, toilet accessories, window treatments, laundry machines, and recessed projection screens.
- Furnishings, Fixtures, and Equipment (FF&E). This includes contractor-furnished, contractor-installed loose items such as desks, tables, chairs, bookshelves, and televisions (if mounted, TV mount would be built-in).
- User-provided FF&E. This includes all government-furnished, government-installed items, which are typically limited to office equipment such as computers, printers, copiers, and projectors (if mounted, projector mount would be built-in).

TABLE 4-1. APPARATUS BAY

Description/ Usage	The Apparatus Bays house the fire protection vehicles. Drive-through bays are preferable. All bays must accommodate the latest and largest structural and ARFF vehicles. Each bay of the Apparatus Room must include the required support utilities (drops) for vehicles such as exhaust, compressed air, hot and cold water, lighting, and power.
Ceiling Ht.	14 ft. (4.26 m) minimum.
Finishes	<p>Walls. Concrete masonry units (CMU). Provide epoxy paints on all wall surfaces.</p> <p>Floor. Provide either a 1-part or 2-part water based epoxy concrete floor paint, in a slip resistant, semi-gloss, light color finish. Final color selection to be coordinated with user and installation. Apply a concrete etcher to thoroughly clean concrete surface and a bonding primer for proper adhesion prior to applying epoxy finish. Slope floor to trench drains.</p> <p>Ceiling. Ceiling not required; however, consider finishing exposed structure. Coordinate mechanical, electrical and plumbing components. None of the ceiling components can be located below minimum ceiling height.</p>
Plumbing	Provide minimum 3-in- (75-mm-) diameter water service with 2.5-in.- (62-mm-) diameter National Standard Threads ball-valve outlet to each vehicle. Provide an emergency eye wash fountain and shower. Provide foot-operated mop sink with mop hanging rack. Provide standard hot and cold water hose bibb for every two truck bays. Provide floor trench drains parallel to the centerline of each vehicle. All apparatus room drains should connect to an approved oil/water separator prior to discharge. If an exterior wash area is provided, size the separator for the total volume and connect the exterior drain to this separator.
HVAC	<p>Provide a system per Chapter 3, HVAC. The Apparatus Bay is typically heated. Maintain 55 degrees F (13 degrees C) minimum temperature except in areas with very mild winter conditions. Determine exceptions on a case-by-case basis based on climatic conditions.</p> <p>The Services will not air condition the Apparatus Bay except through exceptions. In addition to climatic conditions, consider the energy costs and sustainability impacts.</p> <p>Provide a system for elimination of fire apparatus vehicle exhaust in compliance with NFPA 1500, section 502.14 of the International Mechanical Code, and ASHRAE 62.1. This system must include general space ventilation for the apparatus bay in accordance ASHRAE 62.1, "Parking Garages" classification, and a direct vent system that connects directly to the fire apparatus exhaust and evacuates vehicle exhaust directly to the outdoors. The direct vent system can be either an automatic-type Fire Apparatus Vehicle Exhaust Removal System (FAVERS) or a manually operated hose-type exhaust system using "administrative controls" to mandate its use whenever equipment is running in the bay.</p> <p>Provide compressed air system on self-retracting lines at each vehicle bay. Consider providing a floor radiant heating element at each bay door in colder climates to prevent the door from freezing to the pavement.</p>
Fire Protection	Provide a system per Chapter 3, Fire Protection and Life Safety.

TABLE 4-1. APPARATUS BAY

Power	Provide outlets per Chapter 3, Electrical. Locate all outlets at 36 in. (900 mm) above finished floor. Provide self-retracting electric drop cords between vehicles that can reach to either end of the bay. Provide backup power sized to provide full unobstructed operation capability of the apparatus bays. Provide power to each retractable bay door.
Lighting	Provide system per Chapter 3, Electrical. Provide energy efficient lighting with instant-start feature. Provide doors with a signaling system to indicate fully raised doors. A red/green indicator should be located on the driver's side at 72 in. (1800 mm) above finished floor.
Communication	<p>CCTV. Provide interior and exterior outlets located to provide adequate coverage of the Apparatus Bay and facility's main entrance.</p> <p>CATV/Internal Video. None required.</p> <p>PA/Audio. Provide speakers and horns with visual element.</p> <p>Telephone. Provide one line with internal two-way communication.</p> <p>Data. Provide data drops as required by equipment.</p> <p>Security. None required.</p>
Acoustics	No special provisions required.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	
User-provided Equipment	CCTV cameras.
Special Requirements	<p>Provide 14 ft. by 14 ft. (4300 mm by 4300 mm) apparatus bay doors with electric eye and/or automatic reverse device. For ARFF bays provide 18 ft. by 18 ft. (5500 mm by 5500 mm) doors as recommended by NFPA 403. Even if ARFF vehicles are only intended to be housed on one side of a double bay, provide the 18 ft. by 18 ft. (5500 mm by 5500 mm) doors on both sides to permit drive through and to allow flexibility of use. Provide manual means to open doors in case of power failure. If solid door panels are used, provide insulated doors. Consider providing doors with radio-operated closing devices that can be activated from the vehicle.</p> <p>Ensure both the internal floor slope and the approach drive slope allow the fire protection vehicles to transition into and out of the Apparatus Bay without bottoming-out or without impeding driver sightlines.</p> <p>Provide or accommodate ladder access to ceiling equipment such as lights, HVAC, and apparatus vehicle exhaust system equipment.</p>

TABLE 4-2. PPE GEAR STORAGE

Description/ Usage	The Personal Protective Equipment (PPE) area provides storage for the firefighters' protective gear. A well-ventilated locker is assigned to each member of the firefighting crew. Sufficient floor area in front of each locker is required for easy access during emergencies. Typically located along the side walls of the Apparatus Bay.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. CMU. Provide a low-maintenance, durable finish such as industrial latex or epoxy paints on all wall surfaces. Floor. Provide a slip-resistant, sealed concrete surface sloped to the drain. Ceiling. None required. Consider providing durable ACP or GWB ceiling with industrial latex or epoxy paint if space is not a part of Apparatus Room.
Plumbing	Provide a floor drain. If part of Apparatus Bay, ensure hose bibb is available within 20 feet (6.1 m).
HVAC	Provide a system per Chapter 3, HVAC. Provide negative pressure with dedicated exhaust vented to the outside.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 20 ft. candles (200 Lux) with fluorescent energy efficient luminaires.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. Provide speakers and horns with visual element. Telephone. None required. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Provide open 24 in. by 24 in. by 6 ft. ((600 mm by 600 mm by 1800 mm) high wire mesh metal locker that includes shelves and clothes hook. Lockers located along side walls
Furnishings Fixtures & Equipment (FF&E)	
User-provided Equipment	
Special Requirements	Locker layout should permit free air circulation around and throughout clothing.

TABLE 4-3. HOSE STORAGE

Description/ Usage	This area provides for storage of hoses. Hoses are rolled and stored on fixed or mobile storage racks.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. CMU. Provide a low-maintenance, durable finish such as industrial latex or epoxy paints on all wall surfaces. Floor. Provide a slip-resistant, sealed concrete surface sloped to floor drain. Ceiling. None required.
Plumbing	Provide a floor drain. Ensure a hose bibb is available within 20 feet (6.1 m).
HVAC	Provide a system per Chapter 3, HVAC. Ensure space is well ventilated.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical, and dedicated outlets required to support drying equipment (if provided).
Lighting	Provide system per Chapter 3, Electrical.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. Provide a speaker. Telephone. None required. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Consider providing hose drying oven in areas where required by climatic conditions.
Furnishings Fixtures & Equipment (FF&E)	Provide movable racks for roll-up hose storage.
User-provided Equipment	Hoses.
Special Requirements	

TABLE 4-4. SCBA MAINTENANCE/COMPRESSOR ROOM

Description/ Usage	<p>The Self-Contained Breathing Apparatus (SCBA) Maintenance Room is used for the maintenance and minor repair of the SCBA equipment. It includes a work bench, ample task lighting, and shelving for storage of parts and equipment. The room also contains a Mask Pressure Testing Machine.</p> <p>Separate but directly adjacent is the dedicated SCBA Compressor Room, which houses the main compressor unit used to charge the apparatus with filtered air. Ensure direct access between these rooms. This space must include sound attenuation. A compressed air supply line is provided from this room to the SCBA Maintenance Room.</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. CMU. Provide a low-maintenance, durable finish such as industrial latex or epoxy paints on all wall surfaces.</p> <p>Floor. Provide a slip-resistant, sealed concrete surface.</p> <p>Ceiling. None required.</p>
Plumbing	Provide compressed air lines to Apparatus Bay and SCBA Maintenance Room. Provide a floor drain for condensate.
HVAC	Provide a system per Chapter 3, HVAC. Provide positive pressure ventilation to prevent contamination.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 30 ft. candles (300 Lux) with fluorescent energy efficient luminaires. In the SCBA Maintenance Room provide task lighting at the work/service bench at 50 ft. candles (500 Lux).
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. None required.</p> <p>PA/Audio. Provide a speaker.</p> <p>Telephone. Provide one line with internal two-way communication.</p> <p>Data. None required.</p> <p>Security. None required.</p>
Acoustics	Provide partition and door construction with a minimum STC rating of 52 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	Equipment safety cage.
Furnishings Fixtures & Equipment (FF&E)	Provide industrial grade 24 in. (610 mm) deep minimum work bench and storage shelving. Provide scales, spare parts bin.
User-provided Equipment	Provide mask pressure testing machine
Special Requirements	

TABLE 4-5. PROTECTIVE CLOTHING LAUNDRY

Description/ Usage	Protective Clothing Laundry Room is utilized to wash and disinfect firefighters' protective clothing/gear. The room should accommodate large commercial-grade washers and dryers and a drip-dry rack. Locate room with direct access to the exterior, Equipment Maintenance/Wash/ Disinfection Room, and Apparatus Bay.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. CMU. Provide a low-maintenance, durable finish such as epoxy paints on all wall surfaces. Floor. Provide a slip-resistant, sealed concrete surface sloped to floor drain. Ceiling. Provide durable, moisture-resistant ACP or GWB ceiling.
Plumbing	Provide hot and cold water supply and drain to each washer. Provide a floor drain.
HVAC	Provide a system per Chapter 3, HVAC. Provide negative pressure ventilation.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical. Provide additional outlets and power as required by equipment.
Lighting	Provide system per Chapter 3, Electrical.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. Provide a speaker. Telephone. None required. Data. None required. Security. None required
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Large, high-capacity, industrial extractors and dryers that comply with NFPA 1851 and NFPA 1581. Provide one additional dryer per extractors. Extractors must be mounted on concrete foundations. Provide a stainless steel laundry-folding table. Consider providing wall-mounted hanging racks.
Furnishings Fixtures & Equipment (FF&E)	
User-provided Equipment	
Special Requirements	

TABLE 4-6. EQUIPMENT MAINTENANCE/WASH/DISINFECTION

Description/ Usage	<p>The maintenance area is used for the minor repair and maintenance of firefighters' equipment. Provide a work bench with adequate lighting and ample storage.</p> <p>The wash/disinfection area is located adjacent to the maintenance area. It includes a wash-off area where incoming equipment can be washed, desalinated, and dried. When fire trucks return from a fire or other event, equipment is brought into this area for cleaning and disinfection. The equipment is taken from the truck directly to the wash and disinfection area prior to the truck's entry into the Apparatus Bay.</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. CMU. Provide a low-maintenance, durable finish such as industrial latex or epoxy paints on all wall surfaces. Consider using stainless steel wainscot in wash area.</p> <p>Floor. Provide a slip-resistant, sealed concrete surface.</p> <p>Ceiling. Provide durable moisture resistant acoustical ceiling panel (ACP) or GWB ceiling.</p>
Plumbing	In the wash/disinfection area, provide floor mop sink, with hose and spray nozzle. Provide a minimum three-compartment stainless steel sink and a drip dryer rack. Connect to an oil-water separator with holding tank for wastewater from all drains in this area. Provide compressed air supply to both Wash and Maintenance Rooms. Provide floor drain in maintenance area.
HVAC	Provide a system per Chapter 3, HVAC. Provide negative pressure ventilation in both rooms.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 30 ft. candles (300 Lux) with fluorescent energy efficient luminaires. Provide 50 ft. candles (500 Lux) task lighting at work/service bench.
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. None required.</p> <p>PA/Audio. Provide a speaker.</p> <p>Telephone. Provide one line with internal two-way communication.</p> <p>Data. None required.</p> <p>Security. None required.</p>
Acoustics	No special provisions required.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	Provide an 8 ft. by 4 ft. (2400 mm by 1200 mm) stainless steel work table in the wash/disinfection room. Provide industrial grade 24 in. (610 mm) deep minimum work bench with storage shelving and spare parts bins. Consider providing hanging racks and open shelf storage units.
User-provided Equipment	
Special Requirements	

TABLE 4-7. EMT STORAGE AND MEDICAL STORAGE CABINET

Description/ Usage	The EMT Storage area is for storage of basic first aid supplies. It must be directly adjacent to the Apparatus Bay. The space must be fully conditioned. The Medical Storage Cabinet is often a cabinet or subspace within the EMT Storage area and is for storage of drugs, needles, and other restricted medical supplies. Access to EMT Storage is restricted and controlled to prevent theft and abuse of controlled substances.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. Provide CMU or GWB wall with a low-maintenance, durable finish such as industrial latex paint. Floor. Provide low-maintenance resilient sheet or tile flooring material with rubber base. Ceiling. Provide ACP ceiling.
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 30 ft. candles (300 Lux) with fluorescent energy efficient luminaires.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. None required. Telephone. None required. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Provide wall (or free standing FF&E) shelving units.
Furnishings Fixtures & Equipment (FF&E)	Provide a lockable cabinet for the EMT Storage to store drugs and other restricted supplies.
User-provided Equipment	
Special Requirements	Consider providing a keyed lock set at the access point to the space.

TABLE 4-8. HAZMAT/CBRNE EQUIPMENT STORAGE

Description/ Usage	HAZMAT/CBRNE Equipment Storage is a dedicated storage room housing only equipment classified for use with hazardous materials. Provide sufficient floor and open shelf storage areas.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. CMU. Provide a low-maintenance, durable finish such as industrial latex paint. Floor. Provide a sealed concrete surface. A non-skid, low-maintenance traffic coating may also be acceptable. Ceiling. None required.
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC. Provide negative pressure with dedicated exhaust vented to the outside.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 20 ft. candles (200 Lux) with fluorescent energy efficient luminaires.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. Provide a speaker. Telephone. None required. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equip. (FF&E)	Provide industrial and large-item storage shelving units.
User-provided Equipment	
Special Requirements	

TABLE 4-9. AGENT STORAGE

Description/ Usage	Agent Storage is typically a single-story structure separate from the fire station building. It should be located along the drive leading into the Apparatus Bay for ease of loading and unloading of firefighting agents. In some cases, it may be attached to the main structure.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. CMU or metal stud construction. If metal stud construction, provide plywood sheathing for protection. Provide paint finish to plywood. Floor. Provide a sealed concrete surface. Ceiling. None required.
Plumbing	None required.
HVAC	Provide heating where required by location to prevent agents from freezing. Maintain a minimum temperature of 40 degrees F (4.4 degrees C) or per agent's manufacturer's recommendation, whichever is higher.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 30 ft. candles (300 Lux) with fluorescent energy efficient luminaires.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. None required. Telephone. None required. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	
User-provided Equipment	
Special Requirements	Provide double or overhead-type exterior doors. Consider providing insulated doors in locations where required by climatic conditions.

TABLE 4-10. SPARE PPE GEAR STORAGE

Description/ Usage	This space serves to store extra PPE gear for firefighters and reservists currently not on duty, if required by Installation mission requirements. The space includes gear lockers.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. CMU. Provide a low-maintenance, durable finish such as industrial latex or epoxy paints on all wall surfaces. Floor. Provide a sealed concrete surface. A non-skid, low-maintenance traffic coating may also be acceptable. Ceiling. None required.
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 20 ft. candles (200 Lux) with fluorescent energy efficient luminaires.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. Provide a speaker. Telephone. None required. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Provide lockable 24 in. by 24 in. by 72 in. (600 mm by 600 mm by 1800 mm) high wire mesh metal lockers that include shelves and clothes hooks.
Furnishings Fixtures & Equipment (FF&E)	
User-provided Equipment	
Special Requirements	Locker layout should permit free air circulation around and throughout clothing.

TABLE 4-11.1. FIRE EXTINGUISHER (NON FLIGHTLINE) MAINTENANCE AND STORAGE

Description/ Usage	<p>The Non-Flightline Fire Extinguisher Maintenance and Storage includes an indoor storage/maintenance room and possibly an outdoor storage area. The indoor storage/maintenance room accommodates a work bench with adequate lighting to perform maintenance and service of extinguishers, safety cage, scale, recharge kit, and parts storage bins. Provide open shelving for storage of extinguishers.</p> <p>The outdoor storage area is covered and enclosed with a secured screen.</p> <p>This may be combined with the Flightline Fire Extinguisher Maintenance and Storage Area and made as one space with no dividing walls.</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. CMU. Provide a low-maintenance, durable finish such as industrial latex or epoxy paints on all wall surfaces.</p> <p>Floor. Provide a slip-resistant, sealed concrete surface.</p> <p>Ceiling. None required.</p>
Plumbing	Provide a hose bibb and floor drain. Provide eye wash fountain in Maintenance Room.
HVAC	Provide a system per Chapter 3, HVAC. Provide negative pressure ventilation with an exhaust hood. Provide fume discharge to the exterior. Provide a compressed air system with self-retracting lines at the work bench.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 30 ft. candles (300 Lux) with fluorescent energy efficient luminaires. Provide 50 ft. candles (500 Lux) task lighting at work/service bench.
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. None required.</p> <p>PA/Audio. Provide a speaker.</p> <p>Telephone. Provide one line with internal two-way communication.</p> <p>Data. Provide quad outlet at work bench and in locations where required to accommodate equipment.</p> <p>Security. None required.</p>
Acoustics	No special provisions required.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	Provide industrial grade 24 in. (610 mm) minimum work bench, storage shelving, spare parts bin, flammable storage locker, and a floor scale.
User-provided Equipment	
Special Requirements	<p>Provide double leaf doors to exterior.</p> <p>Locate access to Fire Extinguisher Maintenance and Storage away from Apparatus Bay exterior circulation.</p>

TABLE 4-11.2. FIRE EXTINGUISHER (FLIGHTLINE) MAINTENANCE AND STORAGE

Description/ Usage	<p>The Fire Extinguisher Maintenance and Storage includes two parts: outdoor storage and indoor storage/maintenance room. The indoor storage/maintenance room accommodates a work bench with adequate lighting to perform maintenance and service of extinguishers, safety cage, scale, recharge kit, and parts storage bins.</p> <p>The outdoor storage area is covered, enclosed with a secured screen, and accommodates tank recovery, spare tanks, and spare gaseous agent re-servicing tanks.</p> <p>This may be combined with the Non-Flightline Fire Extinguisher Maintenance and Storage Area and made into one space with no dividing walls.</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. CMU. Provide a low-maintenance, durable finish such as industrial latex or epoxy paints on all wall surfaces.</p> <p>Floor. Provide a slip-resistant, sealed concrete surface.</p> <p>Ceiling. None required.</p>
Plumbing	Provide a hose bibb and floor drain. Provide an eye wash fountain.
HVAC	Provide a system per Chapter 3, HVAC. Provide negative pressure with dedicated exhaust vented to the outside. Provide an exhaust hood. Provide a compressed air system with self-retracting lines at the work bench.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 30 ft. candles (300 Lux) with fluorescent energy efficient luminaires. Provide 50 ft. candles (500 Lux) task lighting at work/service bench.
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. None required.</p> <p>PA/Audio. Provide a speaker.</p> <p>Telephone. Provide one line with internal two-way communication.</p> <p>Data. Provide quad outlet at work bench and in locations where required to accommodate equipment.</p> <p>Security. None required.</p>
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Provide cylinder for extinguishing agent recovery (if halon is used, accommodate a 1500 lb (690 kg) cylinder). Consider placing the agent recovery tanks outside the exterior wall of this room and connect via utility lines to a discharge point inside the room. If this approach is taken, provide a remote gauge in the room that displays the tank's fill status.
Furnishings Fixtures & Equipment (FF&E)	Provide industrial grade 24 in. (610 mm) minimum work bench, storage shelving, spare parts bin, flammable storage locker, agent and nitrogen storage, dry chemical extinguisher recharge kit, and a floor scale.
User-provided Equipment	
Special Requirements	<p>Provide double leaf or overhead-type doors to exterior.</p> <p>Locate access to Fire Extinguisher Maintenance and Storage away from Apparatus Bay exterior circulation.</p>

TABLE 4-12. VEHICLE MAINTENANCE BAY

Description/ Usage	This space is mainly used to service and repair firefighting vehicles, if required by Installation mission requirements. At times, this bay may be used as an additional Apparatus Bay as well. The bay is sized to accommodate the largest vehicle and the equipment required to service it. Similar to the Apparatus Bay, the Vehicle Maintenance Bay should be a drive-through.
Ceiling Ht.	14 ft. (4.26 m) minimum.
Finishes	<p>Walls. CMU. Provide epoxy paints on all wall surfaces.</p> <p>Floor. Provide either a 1-part or 2-part water based epoxy concrete floor paint, in a slip resistant, semi-gloss, light color finish. Final color selection to be coordinated with user and installation. Apply a concrete etcher to thoroughly clean concrete surface and a bonding primer for proper adhesion prior to applying epoxy finish. Slope floor to trench drains.</p> <p>Ceiling. Ceiling not required; however, consider finishing exposed structure. Coordinate mechanical, electrical, and plumbing components. None of the ceiling components can be located below minimum ceiling height.</p>
Plumbing	Provide minimum 3-in- (75-mm-) diameter water service with 2.5 in. (62-mm-) diameter National Standard Threads ball valved outlet to each vehicle. Provide standard hot and cold water hose bibb. Provide floor trench drains parallel to the centerline of each vehicle. Trench drain should connect to an approved oil/water separator prior to discharge to the sanitary sewer.
HVAC	<p>Provide a system per Chapter 3, HVAC. The Vehicle Maintenance Bay is typically heated. Maintain 55 degrees F (13 degrees C) minimum temperature except in areas with very mild winter conditions. Determine exceptions on a case-by-case basis based on climatic conditions.</p> <p>The Services will not air condition the Vehicle Maintenance Bay except through exceptions. In addition to climatic conditions, consider the energy costs and sustainability impacts.</p> <p>Provide a system for elimination of fire apparatus vehicle exhaust in compliance with NFPA 1500, section 502.14 of the International Mechanical Code, and ASHRAE 62.1. This system must include general space ventilation for the apparatus bay in accordance ASHRAE 62.1, "Parking Garages" classification, and a direct vent system that connects directly to the fire apparatus exhaust and evacuates vehicle exhaust directly to the outdoors. The direct vent system can be either an automatic-type Fire Apparatus Vehicle Exhaust Removal System (FAVERS) or a manually operated hose-type exhaust system using "administrative controls" to mandate its use whenever equipment is running in the bay.</p> <p>Provide compressed air system on self-retracting lines at each vehicle bay. Consider providing floor radiant heating element at each door in colder climates to prevent the door from freezing to the pavement.</p>
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical. Locate all outlets at 36 in. (900 mm) above finished floor. Provide self-retracting electric drop cords between vehicles. Provide backup power sized to provide full unobstructed operation capability of the Apparatus Bays and Vehicle Maintenance Bay. Provide power to each retractable door.

TABLE 4-12. VEHICLE MAINTENANCE BAY

Lighting	Provide system per Chapter 3, Electrical. Provide energy efficient lighting with instant-start feature. Provide doors with signaling system indicating fully raised doors. A red/green indicator should be located on the driver's side at 72 in. (1800 mm) above finished floor.
Communication	<p>CCTV. Provide interior and exterior cameras located to provide adequate coverage.</p> <p>CATV/Internal Video. None required.</p> <p>PA/Audio. Provide speakers and horns with visual element.</p> <p>Telephone. Provide one line with internal two-way communication.</p> <p>Data. Provide data drops as required by equipment.</p> <p>Security. None required.</p>
Acoustics	No special provisions required.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equip. (FF&E)	Provide tool storage bins and industrial work benches.
User-provided Equipment	CCTV cameras.
Special Requirements	Consider providing hydraulic lifts and/or overhead lift/crane. Provide or accommodate ladder access to ceiling equipment such as lights, HVAC, and apparatus vehicle exhaust system equipment.

TABLE 4-13. VEHICLE MAINTENANCE EQUIPMENT STORAGE

Description/ Usage	Vehicle Maintenance Equipment Storage is tied to the Vehicle Maintenance Bay and is used to store spare parts and tools required for vehicle maintenance and service. It is only provided if required by Installation mission requirements. It should accommodate shelving storage and adequate floor area for storage of large items such as tires and wheels. This space should be adjacent to the Vehicle Maintenance Office and Vehicle Maintenance Bay.
Ceiling Ht.	14 ft. (4.26 m) minimum.
Finishes	Walls. CMU. Provide epoxy paints on all wall surfaces. Floor. Provide a sealed concrete surface. A non-skid, low-maintenance traffic coating may also be acceptable. Ceiling. Ceiling not required; however, consider finishing exposed structure. Coordinate mechanical, electrical, and plumbing components. None of the ceiling components can be located below minimum ceiling height.
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 30 ft. candles (300 Lux) with fluorescent energy efficient luminaires.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. Provide a speaker. Telephone. Provide one line with internal two-way communication. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	Provide industrial or large-item storage shelving units.
User-provided Equipment	
Special Requirements	

TABLE 4-14. DEPLOYMENT GEAR STORAGE

Description/ Usage	This storage space is utilized for storage of firefighting gear required for military deployment, if required by Installation mission requirements. This gear may be used by reservists and/or active duty military personnel. It includes ventilated lockers.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. CMU. Provide epoxy paints on all wall surfaces. Floor. Provide a sealed concrete surface. Ceiling. None required.
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 20 ft. candles (200 Lux) with fluorescent energy efficient luminaires.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. Provide a speaker. Telephone. None required. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Provide lockable 24 in. by 24 in. by 72 in. (600 mm by 600 mm by 1800 mm) high wire mesh metal lockers that include shelves and clothes hooks.
Furnishings Fixtures & Equipment (FF&E)	
User-provided Equipment	
Special Requirements	Locker layout should permit free air circulation around and throughout clothing.

TABLE 4-15. STATION OFFICER'S OFFICE/WATCH DESK

Description/ Usage	The Station Officer's Office provides space for the station officer and/or company officers to perform their administrative functions. For Satellite stations the Station Officers office may serve to control public access to the station. If a Watch Desk function is required, it is typically included in the Station Officer's Office. The Watch Desk receives emergency calls from the Dispatch and contains the security monitors for the station. It is usually occupied 24 hours a day/7 days a week.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. Provide a low-maintenance, durable finish such as egg-shell latex paint. Floor. Provide low maintenance resilient sheet or tile flooring material with rubber base. Consider providing durable commercial carpeting. Ceiling. Provide ACP ceiling system.
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical, and as needed to support the extensive equipment required. Provide two additional quad outlets at the control center console. Provide a switch controlling operation of Apparatus Bay doors.
Lighting	Provide system per Chapter 3, Electrical. Firefighter Alert System: Provide light and audible control for the following elements when the firefighter alert system is activated: Dorm Room lights (the dedicated alert light), corridor lights from Dorm Rooms to Apparatus Bay, and the Apparatus Bay lights.
Communication	CCTV. For stations without a dispatch, monitors for the facility cameras will be located here. Provide outlets required to support required equipment. CATV/Internal Video. Provide outlets required to support required equipment. PA/Audio. Provide simultaneous light and audible control for the entire fire station. Telephone. Provide regular and secure multi-telephone line required to support switch board operation, telephone, and fax. Data. Provide regular and secure data outlets to support required equipment. Security. Provide pin pad/cipher electric lock with remote push button release and manual key override.
Acoustics	Provide partition and door construction with a minimum STC rating of 45 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	Provide tinted windows with blinds.
Furnishings Fixtures & Equipment (FF&E)	Provide control center console (can be built-in casework). Provide modular component workstations to accommodate computers, monitor screens, two-way radios, and audio equipment. Provide wall-mounted Installation grid coordinate map. Provide map racks. Provide safes for classified technical manuals. Provide book cases and ergonomically designed seating.
User-provided Equipment	If the facility does not include a dispatch, CCTV monitors, recording equipment and controls will be located here. Recording system to record all emergency radio and telephone conversations. Computers, computer monitors, radios and audio equipment.
Special Requirements	Provide vision panel to the Apparatus Bay. Provide a 36 in. (920 mm) free access area around the entire control console. Provide space for Emergency Information Systems computer.

TABLE 4-16. FIRE CHIEF’S AND DEPUTY FIRE CHIEF’S OFFICES

Description/ Usage	The Fire Chief’s and Deputy Fire Chief’s Offices are two separate offices that will not exist in every station. When they are both located in a station, they are adjacent to each other and to an administrative assistant and a Chief’s Conference Room. Each office includes a typical office space and workstation. An adjacent private bedroom and private toilet are shared by both offices and should be directly accessible by both offices. Consider making the bedroom/toilet portion part of the standard station dorm room area for added flexibility.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. Provide a low-maintenance, durable finish such as egg-shell latex paint. In toilet consider providing moisture and mildew resistant gypsum wall board, with ceramic tile wainscot, and semi-gloss industrial latex-based paint Floor. Provide durable commercial carpeting with rubber base in office and sleeping areas. Provide ceramic tile and ceramic tile base in toilet. Ceiling. Provide ACP or gypsum board ceiling. Provide moisture resistant gypsum board ceiling in the toilet. Consider egg-shell latex paint in office and sleeping areas, and semi-gloss industrial paint in the toilet.
Plumbing	Provide water closet, shower, and lavatory.
HVAC	Provide a system per Chapter 3, HVAC. Consider providing separate thermostat to operate area as a separate zone.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety. If sleeping accommodations will be provided in this room, provide smoke and CO detectors.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide system per Chapter 3, Electrical. Provide residential-style fixtures and task lighting at individual desks. In addition to the ambient and task luminaires, provide a dedicated alert luminaire that is controllable from the Watch Desk/Dispatch and tied into the firefighting alert system with a red-tinted bulb or lens.
Communication	CCTV. None required. CATV/Internal Video. Provide one outlet in the office area and one outlet in the bedroom area. PA/Audio. Provide a speaker. Telephone. Provide one line with internal two-way communication. Data. Provide data outlets to support required equipment. Security. None required.
Acoustics	Provide partition and door construction with a minimum STC rating of 52 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	Provide office desk, office chair, file cabinet, bookshelf, task lighting, and additional side chair. In the private bedroom provide twin bed, night stand, table lamp and a wardrobe.
User-provided Equipment	Computers and associated equipment.

TABLE 4-16. FIRE CHIEF'S AND DEPUTY FIRE CHIEF'S OFFICES

Special Requirements	In large facilities where an Assistant Fire Chief exists, the private toilet should be shared with the Deputy Fire Chief, and the Fire Chief should be provided with his or her own private toilet. There also may be a requirement for a Chief's Conference Room. If required, this would be directly adjacent to or expand out of the Chief's Office. It provides space for a small conference table for 8 to 10 people.
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TABLE 4-17. OFFICES

Description/ Usage	<p>General administrative office spaces in the station include the following: Assistant Chief/Shift Supervisor Office, Inspector's Office(s), Training Officer Office, Vehicle Maintenance Office, EMS Office, Dispatch Supervisor (if provided), Administrative Assistant, Reservist Office (if provided), Assistant Chief of Fire Prevention (if provided), HAZMAT/Safety Officer (if provided), and Logistics Officer (if provided).</p> <p>The offices are generally grouped together in the Administrative component of the Fire Station. The Administrative Assistant is generally only provided if the Chief and Deputy Chief are resident in the station, in which case this area also doubles as the general reception area for the facility and is located directly off of the lobby (see Table 4-18).</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. Provide a low-maintenance, durable finish such as egg-shell latex paint.</p> <p>Floor. Provide low maintenance resilient sheet or tile flooring material with rubber base. Consider providing durable commercial carpeting.</p> <p>Ceiling. Provide ACP ceiling.</p>
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide system per Chapter 3, Electrical.
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. None required.</p> <p>PA/Audio. Provide a speaker.</p> <p>Telephone. Provide one line with internal two-way communication.</p> <p>Data. Provide data outlets to support required equipment.</p> <p>Security. None required.</p>
Acoustics	Provide partition and door construction with a minimum STC rating of 39 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	Provide office desk, office chair, file cabinet, bookshelf, task lighting, and an additional side chair. For a more executive-level office, consider providing credenza and two additional side chairs.
User-provided Equipment	Computers and associated equipment.
Special Requirements	The Vehicle Maintenance Office will be located near the Vehicle Maintenance Bay and Storage. It will likely have CMU walls and more durable finishes than typical offices.

TABLE 4-18. LOBBY

Description/ Usage	The lobby is generally only provided if the Department Chief and Deputy Chief are resident in the station. It serves as the entrance to the facility and gathering/waiting space for the visiting public. The lobby should be adjacent to the administrative component of the facility. It should be recognizable from the outside and a well-lit, inviting space.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. Provide a low-maintenance, durable finish such as industrial egg-shell latex paint. Floor. Provide low-maintenance resilient sheet or tile flooring material with rubber base. Consider stone or quarry tile with stone or tile base. Ceiling. Provide acoustical and decorative ACP or gypsum board ceiling such as egg-shell latex paint for gypsum board ceiling.
Plumbing	None Required. Provide an electric water cooler.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical. Consider outlets for display cases.
Lighting	Provide system per Chapter 3, Electrical. Consider decorative luminaires and task lighting.
Communication	CCTV. Provide at least one outlet. CATV/Internal Video. None required. PA/Audio. Provide a speaker. Telephone. Consider providing one line for local and toll-free calls or a pay phone. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Provide tack boards. Consider providing a glass-enclosed bulletin board or recessed display cases.
Furnishings Fixtures & Equipment (FF&E)	Provide walk-off mat at entrance (consider a recessed, built-in mat), upholstered seating, side tables, and magazine rack.
User-provided Equipment	CCTV camera.
Special Requirements	Provide airlock at main entrance when necessary.

TABLE 4-19. DEPARTMENT TRAINING ROOM

Description/ Usage	<p>Department Training Room is a classroom space used for the continuing education and training of the fire station staff and, occasionally, the public. It is typically sized to accommodate the entire on-duty population of the Department—provide sufficient seating and desks. Provide audiovisual capabilities with phone and Internet connections for each training station. See Figure D-4 for a sample layout of this space.</p> <p>A storage closet is located adjacent to the Training Room and used for storage of audiovisual equipment, media, additional equipment, and furnishings.</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. Provide a low-maintenance, durable finish such as egg-shell latex paint.</p> <p>Floor. Provide low maintenance resilient sheet or tile flooring material with rubber base. Consider providing durable commercial carpeting.</p> <p>Ceiling. Provide ACP ceiling.</p>
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC. Provide separate thermostat for this room.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical. Consider providing direct power to each work table.
Lighting	Provide system per Chapter 3, Electrical.
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. None required.</p> <p>PA/Audio. Provide a speaker.</p> <p>Telephone. Provide one line with internal two-way communication</p> <p>Data. Provide data outlets to every workstation.</p> <p>Security. None required.</p>
Acoustics	Provide partition and door construction with a minimum STC rating of 45 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	Provide recessed projection screen and overhead projector mount. Provide bulletin board with tack surface and dry-erase board.
Furnishings Fixtures & Equipment (FF&E)	<p>Desks, tablet armchairs or tables, TV, VCR, and DVD player.</p> <p>If a separate testing area is not provided, provide computer/study/testing carrels.</p>
User-provided Equipment	Computers, printer, overhead projector.
Special Requirements	

TABLE 4-20. TESTING/INDIVIDUAL STUDY AREA

Description/ Usage	This area consists of individual computer/study carrels for study and testing of firefighters. Each of these stations must be private to eliminate potential for cheating during testing and to facilitate quiet study. See Figure D-5 for a sample layout of this space.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. Provide a low-maintenance, durable finish such as egg-shell latex paint. Floor. Provide low-maintenance resilient sheet or tile flooring material with rubber base. Consider providing durable commercial carpeting. Ceiling. Provide ACP ceiling.
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC. Consider providing separate thermostat to operate as a separate zone.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical. Provide direct power to each computer/study carol and printer.
Lighting	Provide system per Chapter 3, Electrical.
Communication	CCTV. Provide video camera with monitor located in Testing Officer Office. CATV/Internal Video. None required. PA/Audio. Provide a speaker Telephone. None required. Data. Provide data outlets to all workstations and equipment. Security. None required.
Acoustics	Provide partition and door construction with a minimum STC rating of 49 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	None required.
Furnishings Fixtures & Equipment (FF&E)	Provide four computer/study carrels (to accommodate one company), office chairs, and task lights.
User-provided Equipment	Four computers and one printer.
Special Requirements	

TABLE 4-21. DISPATCH

Description/ Usage	<p>The Dispatch Room defines the similar functions for Fire-only Dispatch and Consolidated Dispatch Rooms. This room functions to receive and dispatch emergency related calls. Fire-only Dispatch rooms are solely responsible for receiving and dispatching fire related emergency calls. A Consolidated Dispatch Room handles fire, security, and medical response service calls.</p> <p>Not every station includes a Dispatch. The Dispatch Room includes workstations sized to accommodate the necessary equipment for each individual dispatcher.</p> <p>In larger Dispatch Rooms, a separate, adjacent room for the Dispatch Supervisor is required. The finishes and mechanical/electrical requirements for this room are the same for Offices (see Table 4-17).</p> <p>Dispatch Rooms also include a dedicated toilet and kitchenette directly adjacent to and accessible from to the room for staff use.</p> <p>Figures D-6.1 and D-6.2 illustrate sample layouts of the Dispatch Room.</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. Provide a low-maintenance, durable finish such as industrial egg-shell latex paint.</p> <p>Floor. Provide low-maintenance resilient sheet or tile flooring material with rubber base. Consider providing durable commercial carpeting.</p> <p>Ceiling. Provide ACP ceiling.</p>
Plumbing	Provide an ADA-accessible toilet with a lavatory and water closet. Provide a kitchenette with a kitchen sink and disposal.
HVAC	Provide a system per Chapter 3, HVAC. Provide independent environmental control equipment.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	<p>Provide outlets per Chapter 3, Electrical and as needed to support all equipment, including charging equipment for handhelds. Provide a switch controlling open only operation of Apparatus Bay doors.</p> <p>The generator must provide back-up power for all Dispatch Room systems. In addition, provide uninterrupted power supply (UPS) for the dispatch equipment.</p>
Lighting	<p>Provide 30 ft. candles (300 Lux) with fluorescent energy efficient luminaires and emergency battery back-up. Consider providing 50 ft. candles (500 Lux) task lighting at control desk.</p> <p>Firefighter Alert System: Provide light and audible control for the following elements when the firefighter alert system is activated: Dorm Room lights (the dedicated alert light), corridor lights from Dorm Rooms to Apparatus Bay, and the Apparatus Bay lights.</p>
Communication	<p>CCTV. Monitors for the facility cameras will be located here. Provide outlets required to support equipment.</p> <p>CATV/Internal Video. Provide outlets required to support equipment.</p> <p>PA/Audio. Provide a speaker and a microphone.</p> <p>Telephone. Provide regular and secure multi-telephone line required to support switchboard operation, telephone, and fax.</p> <p>Data. Provide regular and secure data outlets to support required equipment.</p> <p>Security. Provide pin pad/cipher electric lock with remote push button release and manual key override.</p>
Acoustics	Provide partition and door construction with a minimum STC rating of 49 per Chapter 3, Acoustics.

TABLE 4-21. DISPATCH

Casework/ Built-in Equipment	At kitchenette, provide wall and base cabinets with 24-in- (610-mm-) deep solid surface counter.
Furnishings Fixtures & Equipment (FF&E)	Provide control center console (can be built-in casework). Provide modular component workstations to accommodate computers, monitor screens, two-way radios and audio equipment. Provide map racks. Provide safes for classified technical manuals. Provide book cases, and ergonomically designed seating. Provide a secure drawer or safe for storage of classified documents. Security must meet SECRET criteria.
User-provided Equipment	Computers, monitor screens, two-way radios and audio equipment. Recording system to record all emergency radio and telephone conversations. Wall-mounted Installation grid coordinate map.
Special Requirements	<p>Comply with the requirements for "Communication Centers" in NFPA 1221 as well as the requirements in UFC 4-021-02, Chapter 7.</p> <p>Note that some equipment requires free access area around the entire control console. Design this space appropriate to the equipment being provided. Note any special requirements for the E911 system, if appropriate. If required for selected equipment, provide a conduit to the roof for a roof mounted antennae. Provide an adjacent, dedicated IT room.</p> <p>Provide vision panel to the Apparatus Bay.</p> <p>Provide space for Emergency Information Systems computer. Provide tinted windows with blinds. If possible, operators should be able to see exterior conditions. Also consider providing visible access to the flightline if applicable.</p>

TABLE 4-22. INFORMATION TECHNOLOGY (IT) ROOM

Description/ Usage	This room is the termination point for all data and communication utilities in the facility. This room also houses the equipment racks for the facility's computer networks, telephone, and communication feeds.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. Provide a low-maintenance, durable finish such as egg-shell latex paint. Floor. Provide low-maintenance resilient sheet or tile flooring material with rubber base. Ceiling. Provide ACP ceiling.
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety. Provide a smoke detector.
Power	Provide outlets per Chapter 3, Electrical and as needed to support the extensive equipment required. Provide two additional quad outlets. The generator must provide back-up power for all dispatch and alarm systems. In addition, provide uninterruptible power supply (UPS) for these systems and the computer file server. Provide a transient voltage surge suppression panel board.
Lighting	Provide 50 ft. candles (500 Lux) with fluorescent energy efficient luminaires and emergency battery back-up.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. None required. Telephone. Provide telephone line as required to support equipment. Data. Provide data lines as required to support equipment. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Provide racks to accommodate equipment.
Furnishings Fixtures & Equipment (FF&E)	
User-provided Equipment	
Special Requirements	Provide a cipher lock at the door. Consider locating IT Room in a central location of the station.

TABLE 4-23. DAY/TRAINING ROOM (Including Kitchen)

Description/ Usage	<p>The Day Room is configured and furnished like a very large residential kitchen/dining room/living room. It should be flexible to accommodate a number of different activities. The dining area must accommodate dining, informal meetings, and group training for the number of on-duty companies. Provide plenty of controllable natural light and adequate seating to accommodate all company members—both in the dining setting and comfortable seating for TV watching, reading, and relaxation in the living room area.</p> <p>Directly adjacent to the dining area is a kitchen sized to provide ample preparation space for the entire overnight population of the station. The kitchen should resemble a residential kitchen as much as possible. Provide separate dry and cold food storage for two shifts. Consider providing additional cold and dry food storage for a swing shift and/or other facility occupants.</p> <p>Figures D-7.1 through D-7.4 illustrate sample layouts of the Day Room and its individual components.</p> <p>If a host nation day room is provided, refer to the contractual agreement and points of contact for size, space, and operational criteria.</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. Provide a low-maintenance, durable finish such as industrial egg-shell latex paint.</p> <p>Floor. Provide low-maintenance resilient sheet or tile flooring material with rubber base. In Living Room area, consider providing commercial carpeting.</p> <p>Ceiling. Provide ACP or GWB with egg-shell latex paint.</p>
Plumbing	Provide two-basin, deep kitchen sink. Provide connections for the dishwashers, coffee and ice makers. Provide a floor drain.
HVAC	Provide a system per Chapter 3, HVAC. Provide exhaust hood over kitchen stoves appropriate to the grade of equipment provided.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety. Refer to NFPA 96 to confirm fire protection requirements for the grade of kitchen equipment provided.
Power	Provide outlets per Chapter 3, Electrical and to accommodate all kitchen equipment. Provide dedicated circuits as necessary to minimize power interruptions.
Lighting	Provide system per Chapter 3, Electrical. Provide 50 ft. candles (500 Lux) in the Kitchen areas. Provide 30 ft. candles (300 Lux) ambient and 50 ft. candles (500 Lux) task lighting at the Day/Training Area. Consider residential-style luminaires. Consider providing dimmers for all luminaries.
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. Provide at least one outlet in the living room area.</p> <p>PA/Audio. Provide a speaker.</p> <p>Telephone. Provide one line with internal two-way communication.</p> <p>Data. Provide at least one outlet in the dining/training area. Consider providing outlets in the living room area.</p> <p>Security. None required.</p>
Acoustics	Provide partition and door construction with a minimum STC rating of 45 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	<p>Kitchen area: Provide large-capacity dishwashers, stove/range, exhaust hood, and free-standing ice maker. Provide light commercial-grade equipment. Provide base and wall cabinets with 24-in- (610-mm-) deep solid surface work counter. Provide a minimum of two separate dry storage closets or pantries (one for each of two shifts).</p> <p>Dining/Training area: Provide bulletin board with tack surface. If no department training room is included, provide retractable overhead screen and overhead projector mount and wall-mounted dry-erase board.</p>

TABLE 4-23. DAY/TRAINING ROOM (Including Kitchen)

Furnishings Fixtures & Equipment (FF&E)	<p>Kitchen area: Provide a minimum of two separate refrigerators with freezers (one for each of two shifts), microwave oven, commercial-grade coffee maker, and toaster oven. Provide light commercial-grade equipment.</p> <p>Dining/Training area: Provide dining table with chairs.</p> <p>Living Room area: Provide recliner armchairs, side tables, entertainment center, large-screen TV, VCR, and DVD player. Consider providing bookshelves and coffee table(s).</p>
User-provided Equipment	<p>If no department training room is included, overhead projector is included.</p>
Special Requirements	

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TABLE 4-24. DORM ROOMS

Description/ Usage	<p>Dorm Rooms are the private quarters of the firefighters and are used for sleeping during 24-hour shifts. The room is shared between two firefighters of different crews/shifts so that the room is never occupied simultaneously. Individual wardrobes are provided for each firefighter. A bed, nightstand, and desk are shared. A two-bed arrangement, giving each firefighter an individual bed and nightstand, has become a desirable option in recent years. Wall-beds, also known as “Murphy-beds,” are also becoming a common alternative. These combine the personality of an individual bed with added space savings.</p> <p>The room should be a comfortable, inviting space that promotes relaxation. Acoustical privacy between rooms is important. Provide direct access to a private corridor and means of natural light in every room (consider AT issues, especially in OCONUS locations with regard to natural light provisions).</p> <p>See Figures D-8.1 through D-8.3 for three possible Dorm Room layouts.</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. Provide a low-maintenance, durable finish such as egg-shell latex paint.</p> <p>Floor. Provide durable commercial carpeting with rubber base.</p> <p>Ceiling. Provide painted gypsum ceiling with egg-shell latex paint.</p>
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC. Provide individual thermostats.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety. Provide carbon monoxide and smoke detectors.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	<p>Provide system per Chapter 3, Electrical.</p> <p>In addition to the ambient and task luminaires, provide a dedicated alert luminaire that is controllable from the Watch Desk/Dispatch and tied into the firefighting alert system with a red-tinted bulb or lens.</p>
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. Provide one outlet.</p> <p>PA/Audio. Provide a speaker.</p> <p>Telephone. Provide one line with internal two-way communication.</p> <p>Data. Provide one outlet.</p> <p>Security. None required.</p>
Acoustics	Provide partition and door construction with a minimum STC rating of 52 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	Provide extra-long twin bed, night table, two wardrobes, desk and desk chair, desk light, and alarm clock. As an alternative to a shared bed, provide two beds or two retractable wall beds (retractable beds are built-in casework).
User-provided Equipment	
Special Requirements	

TABLE 4-25. BATHROOMS/SHOWERS/CHANGING

Description/ Usage	The Bathroom/Shower/Changing Room includes private water closets, lavatory, and shower stalls with private changing area for the personal use of the firefighters. Also provide lockers for temporary storage of personal items within this room. These lockers are not for storage of PPE gear.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. Provide a low-maintenance, durable finish such as industrial semi-gloss latex or epoxy paint. Provide full-height ceramic tile with cementitious backerboard. Floor. Provide slip resistant porcelain tile. Ceiling. Provide painted moisture resistant gypsum board ceiling.
Plumbing	Provide shower stalls, lavatories, and water closets. See Special Requirements below for male/female distribution. Provide a floor drain.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical.
Lighting	Provide 15 ft. candles (150 Lux) with fluorescent energy efficient luminaires. Provide 30 ft. candles (300 Lux) task lighting at the mirror.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. Provide a speaker. Telephone. None required. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Provide 24-in- (610 mm) deep minimum solid surface materials for countertops. Provide solid plastic (HDPE) or color-through phenolic shower and toilet partitions. Provide a mirror over the vanity. Provide 24-in- (610-mm-) deep lockers. Provide a mix of full- and half-sized Z-shaped lockers with integral benches (usually part of the locker system) at least 406 mm (16 in. (406 mm) wide. Provide solid plastic (HDPE) or color-through phenolic lockers.
Furnishings Fixtures & Equipment (FF&E)	
User-provided Equipment	

TABLE 4-25. BATHROOMS/SHOWERS/CHANGING

Special Requirements	<p>Divide facilities as follows for smaller stations:</p> <ul style="list-style-type: none">• One-Company Station: Provide 1 water closet, 1 shower, and 1 lavatory for females, and provide 2 water closets, 2 showers, and 2 lavatories for males.• Two-Company Station: Provide 1 water closet, 1 shower, and 1 lavatory for females, and provide 4 water closets, 4 showers, and 3 lavatories for males. <p>For larger stations, consult with user and local codes for final fixture count, but consider both the heavy, concentrated usage of the toilets after a call and the disparity between male and female fixture counts.</p> <p>Fire Stations offer an excellent opportunity to achieve sustainable design rating points for providing shower facilities for 15% of the building's population.</p> <p>Provide a Janitor's closet associated with or in proximity of this room. This closet includes a floor mop sink with hot and cold water and a hose connection, a floor drain, and storage for pails, mops, vacuums, and related cleaning supplies and equipment. Provide a lockable door with a vision panel that can be opened from the inside without a key. Provide lockable cabinets for cleaning supplies. Provide exhaust ventilation directly to the outside.</p>
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TABLE 4-26. FITNESS ROOM

Description/ Usage	<p>The Fitness Room promotes health and physical fitness of fire department personnel. The Fitness Room should accommodate the latest in fitness machines, as well as more traditional equipment. The room should be sized to provide free circulation between equipment while in use.</p> <p>See Figure D-9 for a sample layout of the Fitness Room.</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. Provide a low-maintenance, durable finish such as industrial egg-shell latex paint.</p> <p>Floor. Provide 0.079 in. (2 mm) virgin rubber top surface with a 0.30 in. (7.5 mm) recycled rubber base. Use tile only for easy replacement. Tile must be manufactured in a mould and never cut from rolls, so that placing weights on the seams during installation is not necessary. Impact and athletic flooring system cannot be accommodated by interlocking flooring tiles or movable furnishings such as mats.</p> <p>Ceiling. Provide acoustical ACP or gypsum board ceiling with a finish such as industrial egg-shell latex paint for gypsum board ceiling.</p>
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC. In addition, provide 68 degrees F (20 C) minimum, 74 degrees F (23 C) maximum, less than 60% relative humidity, 20 cfm/person outside air and control ventilation with light switch or occupancy sensor. Provide multi-speed ceiling fans.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical. Provide wall or floor outlets to accommodate fitness machines such as treadmills, bikes, and stair-step machines.
Lighting	Provide system per Chapter 3, Electrical.
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. Provide at least one outlet for a wall-mounted unit.</p> <p>PA/Audio. Provide a speaker.</p> <p>Telephone. Provide one line with internal two-way communication.</p> <p>Data. None required.</p> <p>Security. None required.</p>
Acoustics	Provide partition and door construction with a minimum STC rating of 52 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	Provide full-wall-height mirrors on at least one wall.
Furnishings Fixtures & Equipment (FF&E)	Provide fitness machines, treadmill, stationary bicycle, elliptical machine, weights, and mats. Consider providing a wall-mounted television.
User-provided Equipment	
Special Requirements	

TABLE 4-27. LAUNDRY ROOM

Description/ Usage	The Laundry Room contains washers, dryers, and a folding table for use by the firefighters. This laundry room is only used for personal clothing of the firefighters and occasionally for laundry from the common areas of the fire station—not for any firefighting gear.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. Provide a low-maintenance, durable finish such as industrial semi-gloss latex paint.</p> <p>Floor. Provide a low-maintenance, slip/skid-resistant, sealed concrete flooring with rubber base.</p> <p>Ceiling. Consider providing durable, moisture-resistant ACP or GWB ceiling. Consider semi-gloss latex paint for gypsum board ceiling.</p>
Plumbing	Provide water supply and drain to each washer. Provide a floor drain. Provide a deep laundry sink.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical. Provide an additional outlet at the folding table.
Lighting	Provide system per Chapter 3, Electrical.
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. None required.</p> <p>PA/Audio. Provide a speaker.</p> <p>Telephone. None required.</p> <p>Data. None required.</p> <p>Security. None required.</p>
Acoustics	No special provisions required.
Casework/ Built-in Equipment	Provide a built-in laundry-folding table and wall-mounted drying rack.
Furnishings Fixtures & Equipment (FF&E)	<p>Provide large, heavy-duty, residential washers and dryers:</p> <ul style="list-style-type: none"> • Less than 3 companies. One washer and two dryers. • 4 companies. Two washers and four dryers. • More than 4 companies. Three washers and six dryers.
User-provided Equipment	
Special Requirements	This Laundry Room is to be utilized only for washing staff's personal linens and clothing.

TABLE 4-28. RECREATION ROOM

Description/ Usage	If required by the Installation mission, this room provides space for the firefighters to engage in noisier recreational activities, such as table games (e.g., pool or table tennis) or video games and is in addition to the Day Room. Provide some acoustical separation from the Day Room and the Dorm Rooms.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. Provide a low-maintenance, durable finish such as industrial egg-shell latex paint. Floor. Provide low-maintenance resilient sheet or tile flooring material with rubber base. Consider providing durable commercial carpeting. Ceiling. Provide acoustical ACP or gypsum board ceiling such as industrial egg-shell latex paint for gypsum board ceiling.
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC. Provide a separate thermostat to operate as a separate zone.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical. Provide power required to accommodate any game equipment.
Lighting	Provide system per Chapter 3, Electrical. Consider residential-style luminaires. Consider providing dimmer for all luminaires.
Communication	CCTV. None required. CATV/Internal Video. Provide at least one outlet. Consider height of outlet for a wall-mounted television. PA/Audio. Provide a speaker. Telephone. Provide one line with internal two-way communication. Data. None required. Security. None required.
Acoustics	Provide partition and door construction with a minimum STC rating of 52 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	Provide pool table/table-tennis table, lounge chairs, side tables, bar stools, book cases, and storage cabinets.
User-provided Equipment	
Special Requirements	

TABLE 4-29. VENDING

Description/ Usage	<p>The vending area accommodates two or more vending machines for snacks and drinks. The vending area should be conveniently located for the use of firefighters and fire station staff.</p> <p>Do not place vending machines in the Day Room or Lobby. Recommended locations include the Recreation Room (if provided) or an alcove off of a main hallway.</p>
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	<p>Walls. Provide a low-maintenance, durable finish such as egg-shell latex paint.</p> <p>Floor. Provide low-maintenance resilient sheet or tile flooring material with rubber base.</p> <p>Ceiling. Provide ACP or painted gypsum ceiling.</p>
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical. Provide outlets and power required by vending machines.
Lighting	Provide 20 ft. candles (200 Lux) with fluorescent energy efficient luminaires.
Communication	<p>CCTV. None required.</p> <p>CATV/Internal Video. None required.</p> <p>PA/Audio. None required.</p> <p>Telephone. None required.</p> <p>Data. None required.</p> <p>Security. None required.</p>
Acoustics	No special provisions required.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	
User-provided Equipment	Vending machines.
Special Requirements	

TABLE 4-30. OUTDOOR PATIO/BBQ

Description/ Usage	This is an outdoor patio space. Its character should resemble a residential patio or deck. Firefighters will relax, play games, and barbeque in this space during their 24-hour shift when weather permits. Patio should be adjacent to or in close proximity to the Apparatus Bay for easy access in the event of a call and be directly accessible from the Day Room.
Ceiling Ht.	Not applicable. Consider providing shade structures.
Finishes	Walls. None required. Floor. Concrete. Consider brick or stone paver accents. Ceiling. None required.
Plumbing	Provide hose bibb. If natural gas is available, consider providing a gas connection to an external grill.
HVAC	None required.
Fire Protection	None required. If an attached awning is provided, refer to NFPA 13 for the fire protection requirements.
Power	Provide exterior outlets per Chapter 3, Electrical.
Lighting	Provide .5 ft. candles (5 Lux) with energy efficient outdoor luminaires. Provide 5 ft. candles (50 Lux) at the grill.
Communication	CCTV. None required. CATV/Internal Video. None required. PA/Audio. Provide a speaker. Telephone. None required. Data. None required. Security. None required.
Acoustics	No special provisions required.
Casework/ Built-in Equipment	
Furnishings Fixtures & Equipment (FF&E)	Provide garden furniture: tables, chairs, lounge chairs, garden umbrella, grill (consider the provision for a gas outlet when selecting the grill type) and exterior surface walk-off mat at entrance to Day Room.
User-provided Equipment	
Special Requirements	

TABLE 4-31. EOC SITUATION ROOM

Description/ Usage	This Emergency Operations Center Situation Room is a specialized conference room used in cases of major operations to manage and coordinate rescue and emergency service efforts, if required by the Installation mission. It should be set up to handle planned and ad-hoc meetings and a high volume of telephone and computer communications.
Ceiling Ht.	8 ft. (2.4 m) minimum.
Finishes	Walls. Provide a low-maintenance, durable finish such as egg-shell latex paint. Floor. Provide low-maintenance resilient sheet or tile flooring material with rubber base. Consider providing durable commercial carpeting. Ceiling. Provide ACP ceiling.
Plumbing	None required.
HVAC	Provide a system per Chapter 3, HVAC. Provide a separate thermostat to operate as a separate zone.
Fire Protection	Provide system per Chapter 3, Fire Protection and Life Safety.
Power	Provide outlets per Chapter 3, Electrical and to support all equipment.
Lighting	Provide system per Chapter 3, Electrical.
Communication	CCTV. Provide outlets required to support equipment. CATV/Internal Video. Provide outlets required to support equipment. PA/Audio. Provide a speaker and a microphone. Telephone. Provide regular and secure multi-telephone line required to support telephone and fax. Data. Provide regular and secure data outlets to support required equipment. Security. None required.
Acoustics	Provide partition and door construction with a minimum STC rating of 49 per Chapter 3, Acoustics.
Casework/ Built-in Equipment	Provide a retractable projector screen, overhead projector mount, and tack and dry-erase boards. Consider providing built-in case work such as a counter and base cabinets.
Furnishings Fixtures & Equipment (FF&E)	Provide conference table, conference room chairs, side tables, televisions (consider flat screen for wide angle viewing), and map racks.
User-provided Equipment	Overhead projector, other audio/visual equipment, and wall-mounted grid map.
Special Requirements	Locate EOC Situation Room in an interior area of the building, adjacent to the Dispatch. Classified information may be accessed in this room. If so, address security, visibility, and data handling issues.

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APPENDIX A REFERENCES

ARCHITECTURAL WOODWORK INSTITUTE

<http://www.awinet.org>

AWI Quality Standards Illustrated

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS

<http://www.ashrae.org>

ASHRAE 62.1, *Ventilation for Acceptable Indoor Air Quality*

DEPARTMENT OF HOMELAND SECURITY, U.S. FIRE ADMINISTRATION

<http://www.usfa.fema.gov/index.shtm>

FA-168, *Safety and Health Considerations for the Design of Fire and Emergency Medical Services Stations*

DEPARTMENT OF DEFENSE

<http://www.dtic.mil/whs/directives/corres/ins1.html>

DoD Instruction 6055.06, *DoD Fire and Emergency Services Program*

DEPARTMENT OF DEFENSE, UNIFIED FACILITIES CRITERIA

<http://dod.wbdg.org/>

UFC 1-200-01, *General Building Requirements*

UFC 1-200-02, *High Performance and Sustainable Building Requirements*

UFC 2-000-05N (P-80), *Facility Planning Criteria for Navy and Marine Corps Shore Installations*

UFC 3-101-01, *Architecture*

UFC 3-201-02, *Landscape Architecture*

UFC 3-401-01, *Mechanical Engineering*

UFC 3-410-01, *Heating, Ventilating, and Air Conditioning Systems*

UFC 4-021-02, *Electronic Security Systems*

DEPARTMENT OF THE MARINE CORPS

MCO P11000.11B, *Marine Corps Fire Protection and Emergency Services Program*,
<http://www.afgefirefighters.org/documents/MarineMCO20P11000.11B.pdf>

DEPARTMENT OF THE NAVY

NAVFACINST 11010.45, *Comprehensive Regional Planning Instruction*,
<http://www.lowimpactdevelopment.org/guest75/pub/Neil/army%20lid%20manual/Shared%20Reference%20Information%20LIDC/Navy%20LID%20Lantdiv%202008/Final%20cd/NAVFAC%20Instruction%2011010.45.pdf>

OPNAVINST 11010.20G, *Facilities Projects Manual, SECNAV/OPNAV Directives Control Office*,
<http://doni.daps.dla.mil/Directives/11000%20Facilities%20and%20Land%20Management%20Ashore/11-00%20Facilities%20and%20Activities%20Ashore%20Support/11010.20G%20w%20CH-1.pdf>

INTERNATIONAL CODE COUNCIL

<http://www.iccsafe.org>

International Mechanical Code (IMC)

NATIONAL FIRE PROTECTION ASSOCIATION

<http://www.nfpa.org>

NFPA 13, *Standard for the Installation of Sprinkler Systems*

NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*

NFPA 101, *Life Safety Code*

NFPA 403, *Standard for Aircraft Rescue and Fire-Fighting Services at Airports*

NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*

NFPA 1581, *Standard on Fire Department Infection Control Program*

NFPA 1851, *Standard on Selection, Care, and Maintenance of Protective Ensembles*

APPENDIX B GLOSSARY

ACRONYMS AND ABBREVIATIONS.

ACP:	Acoustical Ceiling Panel
ADA:	Americans with Disabilities Act
ARFF:	Aircraft Rescue Firefighting
ASHRAE:	American Society of Heating, Refrigerating and Air Conditioning Engineers
AT:	Antiterrorism
AWI:	American Woodworking Institute
BIA:	Bilateral Infrastructure Agreements
BFR:	Basic Facility Requirement
C:	Celsius
CATV:	Cable Television
CBRNE:	Chemical, Biological, Radiological, Nuclear, Explosive
CCTV:	Closed-circuit Television
CMU:	Concrete Masonry Units
CNIC:	Commander, Navy Installations Command
CO:	Carbon Monoxide
CONUS:	Continental United States
DoD:	Department of Defense
DVD:	Digital Video Disc
EMS:	Emergency Medical Services
EMT:	Emergency Medical Technician
EOC:	Emergency Operations Center
ESS:	Electronic Security Systems
F:	Fahrenheit

FAVERS: Fire Apparatus Vehicle Exhaust Removal System

FC: Facilities Criteria

FF&E: Furniture, Fixtures and Equipment

ft: Foot/feet

gal: Gallon

GWB: Gypsum Wall Board

HAZMAT: Hazardous Materials

HDPE: High-Density Polyethylene

HNFA: Host Nation Funded Construction Agreements

HQ: Headquarters

Ht: Height

HVAC: Heating, Ventilating, and Air Conditioning

IAP: Installation Appearance Plans

In: Inch(es)

IT: Information Technology

kg: Kilogram

L: Liter

lb: Pound

m: Meter

MCO: Marine Corps Order

MLC: Master Labor Contracts

mm: Millimeter

NAVFAC: Naval Facilities Engineering Command

NFPA: National Fire Protection Association

OCONUS: Outside Continental United States

PA:	Public Address
PPE:	Personal Protective Equipment
SCBA:	Self-contained Breathing Apparatus
SF:	Square Feet
SOFA:	Status of Forces Agreement
STC:	Sound Transmission Coefficient
TV:	Television
Typ:	Typical
UFC:	Unified Facilities Criteria
UPS:	Uninterrupted Power Supply
US:	United States
VCR:	Videocassette Recorder
WBDG:	Whole Building Design Guide

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APPENDIX C SPACE PROGRAM

C-1 SAMPLE INTERACTIVE WORKSHEETS.

Figures C-1.1 through C-1.4 illustrate a sample Interactive Worksheet completed for a hypothetical Navy Headquarters Station. Figures C-2.1 through C-2.4 illustrate a sample Interactive Worksheet completed for a hypothetical Marine Corps Satellite Station. These worksheets were developed using the interactive “Fire Stations Space Planning Worksheet”. The worksheet can be downloaded from the WBDG website at http://www.wbdg.org/references/pa_dod_sps.php. The examples shown are not intended to be a definitive standard for a Navy Headquarters Station or a Marine Corps Satellite Fire Station, but are shown only for familiarity with the output results of the worksheet.

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FIGURE C-1.1. SAMPLE COMPLETED INTERACTIVE WORKSHEET FOR A NAVY HEADQUARTERS FIRE STATION

Sample Navy HQ/Main Fire Station Project, Naval Base Norfolk, Norfolk, VA					
Select Service Branch:	Navy				
Select Type of Facility <small>* Select Type as Structural, ARFF, or Combination.</small>	Combination				
Select Class of Facility <small>* Select Class as HQ/Main, Satellite, or Large HQ.</small>	HQ/Main				
Staffed Companies and Dorm Rooms					
Enter No. of Structural Companies:	2				
Enter No. of ARFF Companies:	2				
<small>* Navy stations range from 1 company up to 8 cos. Dorm Room count relates to co. count as follows: 5 rooms per structural co. and 4 rooms per ARFF co. You can modify the count below.</small>					
Based on no. of companies entered, the following dorm rooms will be provided:	18				
Modify Dorm Room count (+ or -) as needed: <small>* Add or subtract to the Dorm Room count as needed. Note, each Ambulance co. will typically require +2 rooms and each Rescue co. will typically require +3 rooms. Also consider X-staffing when modifying the count. Carefully review final room count with PM.</small>	0				
Total Dorm Room Count:	18				
Enter No. of Each Class of Vehicle to be Housed					
	Bay Sizes **				
Large	2	6706 mm (22 ft.) by 18288 mm (60 ft.)			
Medium	2	6706 mm (22 ft.) by 18288 mm (60 ft.)			
Large ARFF	1	6706 mm (22 ft.) by 18288 mm (60 ft.)			
Medium ARFF	2	6706 mm (22 ft.) by 18288 mm (60 ft.)			
Small	3	Small vehicles do not have a dedicated bay size.			
<small>** Bay size includes area required around vehicle. Bay sizes are driven by largest vehicle selected, i.e., if at least 1 Large ARFF truck is entered, all bays will accommodate that size truck. See Para. 2-2.2-1 for more information.</small>					
Total Vehicles:	8				
Maintenance and Apparatus Room Spaces					
Based on vehicle classes & quantities entered above, the basic Apparatus Room is sized:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th style="width: 50px;">m²</th> <th style="width: 50px;">ft.²</th> </tr> <tr> <td style="text-align: center;">613.1</td> <td style="text-align: center;">6,600</td> </tr> </table>	m ²	ft. ²	613.1	6,600
m ²	ft. ²				
613.1	6,600				
Based on the quantity of Small vehicles entered above, consider additional area as follows: <small>* This suggested area must be carefully reviewed by the planning team. Review the actual size of Small vehicles and space available in other bays.</small>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th style="width: 50px;">m²</th> <th style="width: 50px;">ft.²</th> </tr> <tr> <td style="text-align: center;">122.6</td> <td style="text-align: center;">1,320</td> </tr> </table>	m ²	ft. ²	122.6	1,320
m ²	ft. ²				
122.6	1,320				
	<small>Check here to delete additional Bay area. > <input type="checkbox"/></small>				
Based on no. of Dorm Rooms entered above, the PPE Gear Storage Area is sized:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th style="width: 50px;">m²</th> <th style="width: 50px;">ft.²</th> </tr> <tr> <td style="text-align: center;">16.7</td> <td style="text-align: center;">180</td> </tr> </table>	m ²	ft. ²	16.7	180
m ²	ft. ²				
16.7	180				
Based on selections entered above, the Hose Storage Area is sized: <input type="checkbox"/>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th style="width: 50px;">m²</th> <th style="width: 50px;">ft.²</th> </tr> <tr> <td style="text-align: center;">5.0</td> <td style="text-align: center;">54</td> </tr> </table>	m ²	ft. ²	5.0	54
m ²	ft. ²				
5.0	54				
Based on selections entered above, the SCBA Maint. Room is sized: <input type="checkbox"/>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th style="width: 50px;">m²</th> <th style="width: 50px;">ft.²</th> </tr> <tr> <td style="text-align: center;">13.4</td> <td style="text-align: center;">144</td> </tr> </table>	m ²	ft. ²	13.4	144
m ²	ft. ²				
13.4	144				
Based on selections entered above, the SCBA Compressor Rm is sized: <input type="checkbox"/>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th style="width: 50px;">m²</th> <th style="width: 50px;">ft.²</th> </tr> <tr> <td style="text-align: center;">4.6</td> <td style="text-align: center;">50</td> </tr> </table>	m ²	ft. ²	4.6	50
m ²	ft. ²				
4.6	50				
Based on selections entered above, the Work Rm/Equip Maint. is sized:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th style="width: 50px;">m²</th> <th style="width: 50px;">ft.²</th> </tr> <tr> <td style="text-align: center;">11.1</td> <td style="text-align: center;">120</td> </tr> </table>	m ²	ft. ²	11.1	120
m ²	ft. ²				
11.1	120				
Based on selections entered above, the Equip Wash/Disinfect. is sized:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th style="width: 50px;">m²</th> <th style="width: 50px;">ft.²</th> </tr> <tr> <td style="text-align: center;">13.9</td> <td style="text-align: center;">150</td> </tr> </table>	m ²	ft. ²	13.9	150
m ²	ft. ²				
13.9	150				

FIGURE C-1.2. SAMPLE COMPLETED INTERACTIVE WORKSHEET FOR A NAVY HEADQUARTERS FIRE STATION (continued)

Sample Navy HQ/Main Fire Station Project, Naval Base Norfolk, Norfolk, VA			
Based on selections entered above, the Protect. Clothing Laund. is sized:		18.6	200
Based on selections entered above, the EMT Storage Room is sized:		3.7	40
Based on selections entered above, the HAZMAT Equip. Storage is sized: <input type="checkbox"/>		11.1	120
Based on selections entered above, the Spare PPE Storage is sized: <input type="checkbox"/>		5.9	64
Select Vehicle Maint./Storage Bay (yes or no):	Yes	111.5	1,200
Vehicle Maint./Storage Bay includes Vehicle Maint. Office at:		13.9	150
Vehicle Maint./Storage Bay includes Vehicle Maint. Equipment Storage at:		37.2	400
Enter Fire Extng. Inspection (no. of stations):	2	4.5	48
Select Non-Flightline Fire Extng. Maint. (yes or no):	Yes	11.1	120
Select Flightline (FL) Fire Extng. Maint. (yes or no):	Yes	14.9	160
Select FL Fire Extng. Covered Storage (yes or no):	Yes	3.7	40
Air Force-only.			
Day Room and Residential Area			
Based on no. of Companies entered above, the Day Room is sized:		m ² 240.8	ft ² 2,592
Select Dorm Room bed configuration	One Bed		
Based on Total Dorm Room Count & bed configuration selected, the Dorm Room Area is sized: This provides space for the 'One Bed' configuration (at 10.03 sm (108 sf) per room) for the following: 2 Structural Companies, 2 ARFF Companies, and 0 additional Dorm Rooms (for ambulance or rescue companies or other modifications).		180.6	1,944
Based on no. of Companies entered above, the Bathrooms are sized:		39.9	430
Based on no. of Companies entered above, the Laundry Room is sized:		14.9	160
Based on no. of Companies entered above, the Fitness Room is sized:		40.6	437
Based on no. of Companies entered above, the Vending Area is sized:		5.6	60
Select Physical Therapy/Sauna (yes or no)	No		
Select Recreation Room (yes or no)	Yes	33.4	360
Training and Administrative Area			
Station Officer's Office/ Watch Desk		m ² 11.1	ft ² 120

FIGURE C-1.3. SAMPLE COMPLETED INTERACTIVE WORKSHEET FOR A NAVY HEADQUARTERS FIRE STATION (continued)

Sample Navy HQ/Main Fire Station Project, Naval Base Norfolk, Norfolk, VA		
Based on selections entered above, the Fire Chief's Office is provided:	<input type="checkbox"/>	32.1 345 <small>Check here to delete Fire Chief's Office in this HQ station. ></small>
Select Deputy Chief's Office (yes or no):	Yes	11.1 120
Based on selections entered above, the Lobby Area is provided:	<input type="checkbox"/>	9.3 100 <small>Check here to delete Lobby Area in this HQ station. ></small>
Public toilet (ADA-compliant, unisex)		4.2 45
Based on selections entered above, the Admin. Asst. is provided:	<input type="checkbox"/>	5.9 64 <small>Check here to delete Admin. Asst. in this HQ station. ></small>
Based on selections entered above, the Chief's Conf. Room is provided:	<input type="checkbox"/>	11.1 120 <small>Check here to delete Chief's Conf. Room in this HQ station. ></small>
Select Asst. Chief/ Shift Supervisor (yes or no):	Yes	11.1 120
Select Asst. Chief of Fire Prevention (yes or no):	Yes	11.1 120
Enter Inspector(s) Offices (no. of workstations): <small>* If required, enter the no. of workstations desired at this station.</small>	2	8.9 96
Select EMS Office (yes or no):	Yes	7.4 80
Select HAZMAT/ Safety Office (yes or no):	Yes	11.1 120
Select Logistics Office (yes or no):	Yes	7.4 80
Select Training Officer Office (yes or no):	Yes	9.3 100
Enter Dept. Training Room (no. of people): <small>* If required, enter the no. of people to be accommodated/trained (typically this no. is the total on-duty Department staff).</small>	18	46.8 504
Dept. Training Room includes Training Room Storage at:		7.4 80
HQ Computer Training/Testing Room (per six testing stations)		17.7 190 <small>Check here to delete HQ Computer Training/Testing Room in this station. ></small>
General Admin Storage		7.4 80 <small>Check here to delete General Admin Storage in this station. ></small>
IT Room		1.9 20
Select EOC Situation Room* (yes or no): <small>* Note: This is usually only provided in HQ stations that are consolidated with Police/ Security and Emergency Medical Services (EMS).</small>	No	
Air Force-only.		
Air Force-only.		
Air Force-only.		

FIGURE C-1.4. SAMPLE COMPLETED INTERACTIVE WORKSHEET FOR A NAVY HEADQUARTERS FIRE STATION (continued)

Sample Navy HQ/Main Fire Station Project, Naval Base Norfolk, Norfolk, VA						
Dispatch						
Enter no. of Dispatch stations (on-duty Dispatchers):	<input type="text" value="4"/>	<table border="1"><tr><td>m²</td><td>ft²</td></tr><tr><td>71.3</td><td>768</td></tr></table>	m ²	ft ²	71.3	768
m ²	ft ²					
71.3	768					
Dispatch includes Dispatch Bathroom at:		<table border="1"><tr><td>4.5</td><td>48</td></tr></table>	4.5	48		
4.5	48					
Dispatch includes Dispatch Kitchenette at:		<table border="1"><tr><td>1.9</td><td>20</td></tr></table>	1.9	20		
1.9	20					
Dispatch includes Additional IT Room Space space at:		<table border="1"><tr><td>5.6</td><td>60</td></tr></table>	5.6	60		
5.6	60					
Select Dispatch Supervisor (yes or no):	<input type="text" value="Yes"/>	<table border="1"><tr><td>5.9</td><td>64</td></tr></table>	5.9	64		
5.9	64					
* This provides space for a Dispatch Supervisor's workstation.						
Building Totals						
	Subtotal - Total Net Building Area	<table border="1"><tr><td>1,914.4</td><td>20,607</td></tr></table>	1,914.4	20,607		
1,914.4	20,607					
Net-to-Gross factor (modify as necessary):	<input type="text" value="20%"/> (factor at 0.2)	<table border="1"><tr><td>382.9</td><td>4,121</td></tr></table>	382.9	4,121		
382.9	4,121					
* The net-to-gross factor accounts for circulation space, mechanical space, and wall thicknesses. The net-to-gross multiplier for Fire Stations may vary from 18% to 22% depending on the size of the Apparatus Room relative to the rest of the facility. Typically, the larger the Apparatus Bay, the lower the multiplier and vice versa. However, carefully consider the entire building configuration before changing the factor from the default setting of 22%.						
<table border="1"> <tr> <td> Summary for Navy Fire Station: Type of Facility = Combination Class of Facility = HQ/Main Total Dorm Room Count = 18 Total No. of Apparatus Bays = 6 </td> </tr> </table>	Summary for Navy Fire Station: Type of Facility = Combination Class of Facility = HQ/Main Total Dorm Room Count = 18 Total No. of Apparatus Bays = 6	TOTAL GROSS BUILDING	<table border="1"><tr><td>2,297.3</td><td>24,728</td></tr></table>	2,297.3	24,728	
Summary for Navy Fire Station: Type of Facility = Combination Class of Facility = HQ/Main Total Dorm Room Count = 18 Total No. of Apparatus Bays = 6						
2,297.3	24,728					
Site						
Based on selections entered above, Staff Parking is sized:		<table border="1"><tr><td>1,505.0</td><td>16,200</td></tr></table>	1,505.0	16,200		
1,505.0	16,200					
Based on selections entered above, Visitor Parking is sized:		<table border="1"><tr><td>209.0</td><td>2,250</td></tr></table>	209.0	2,250		
209.0	2,250					
Based on selections entered above, Bicycle Rack Area is sized:		<table border="1"><tr><td>14.9</td><td>160</td></tr></table>	14.9	160		
14.9	160					
Based on selections entered above, Site Approach to Apparatus Bays is sized:		<table border="1"><tr><td>1,114.8</td><td>12,000</td></tr></table>	1,114.8	12,000		
1,114.8	12,000					
Based on selections entered above, Agent Storage (ARFF) is sized:		<table border="1"><tr><td>20.9</td><td>225</td></tr></table>	20.9	225		
20.9	225					
Based on selections entered above, Agent Storage (Structural) is sized:		<table border="1"><tr><td>4.5</td><td>48</td></tr></table>	4.5	48		
4.5	48					
Based on selections entered above, Patio is sized:		<table border="1"><tr><td>23.2</td><td>250</td></tr></table>	23.2	250		
23.2	250					
	TOTAL GROSS SITE SUPPORT	<table border="1"><tr><td>2,892.3</td><td>31,133</td></tr></table>	2,892.3	31,133		
2,892.3	31,133					
	TOTAL GROSS FACILITY (BUILDING + SITE SUPPORT)	<table border="1"><tr><td>5,189.5</td><td>55,861</td></tr></table>	5,189.5	55,861		
5,189.5	55,861					

FIGURE C-2.1. SAMPLE COMPLETED INTERACTIVE WORKSHEET FOR A MARINE CORPS SATELLITE FIRE STATION

Sample Marine Corps Satellite Fire Station, MCB Camp Lejeune, Jacksonville, NC	
Select Service Branch:	Marine Corps
Select Type of Facility	Structural
* Select Type as Structural, ARFF, or Combination. Note: The Marine Corps rarely builds Combination Stations, and that selection must be justified.	
Select Class of Facility	Satellite
* Select Class as HQ/Main or Satellite. The Marine Corps does not build Large HQ Facilities.	
Staffed Companies and Dorm Rooms	
Enter No. of Structural Companies:	2
* Marine Corps stations range from 1 company up to 8 cos. Dorm Room counts relate to co. count as follows: 4 rooms per structural co. and 4 rooms per ARFF co. You can modify the count below.	
Based on no. of companies entered, the following dorm rooms will be provided:	8
Modify Dorm Room count (+ or -) as needed:	2
* Add or subtract to the Dorm Room count as needed. Note, each Ambulance co. will typically require +2 rooms and each Rescue co. will typically require +3 rooms. Also consider X-staffing when modifying the count. Carefully review final room count with PM.	
Total Dorm Room Count:	10
Enter No. of Each Class of Vehicle to be Housed	
	Bay Sizes **
Large	1 5944 mm (19.5 ft.) by 18288 mm (60 ft.)
Medium	1 5944 mm (19.5 ft.) by 18288 mm (60 ft.)
Large ARFF	6706 mm (22 ft.) by 18288 mm (60 ft.)
Medium ARFF	6706 mm (22 ft.) by 18288 mm (60 ft.)
Small	1 Small vehicles do not have a dedicated bay size.
** Bay size includes area required around vehicle. Bay sizes are driven by largest vehicle selected, i.e., if at least 1 Large ARFF truck is entered, all bays will accommodate that size truck. See Para. 2-2.2-1 for more information.	
Total Vehicles:	3
Maintenance and Apparatus Room Spaces	
Based on vehicle classes & quantities entered above, the basic Apparatus Room is sized:	m ² ft ² 217.4 2,340
Based on the quantity of Small vehicles entered above, consider additional area as follows:	
* This suggested area must be carefully reviewed by the planning team. Review the actual size of Small vehicles and space available in other bays.	
Based on no. of Dorm Rooms entered above, the PPE Gear Storage Area is sized:	9.3 100
Hose Storage is typically only provided in Main Stations. If required, check box below.	
<input type="checkbox"/> < Check here to add Hose Storage in this Satellite station.	
SCBA Maint. Room is typically only provided in Main Stations. If required, check box below.	
<input type="checkbox"/> < Check here to add SCBA Maintenance Room in this Satellite station.	
SCBA Compressor Rm is typically only provided in Main Sta. If required, check box below.	
<input type="checkbox"/> < Check here to add SCBA Compressor Room in this Satellite station.	
Based on selections entered above, the Work Rm/Equip Maint. is sized:	11.1 120
Based on selections entered above, the Equip Wash/Disinfect. is sized:	13.9 150

FIGURE C-2.2. SAMPLE COMPLETED INTERACTIVE WORKSHEET FOR A MARINE CORPS SATELLITE FIRE STATION (continued)

Sample Marine Corps Satellite Fire Station, MCB Camp Lejeune, Jacksonville, NC		
Based on selections entered above, the Protect. Clothing Laundry is sized:	9.3	100
Based on selections entered above, the EMT Storage Room is sized:	3.7	40
HAZMAT Equip. Storage is typically only provided in Main Sta. If required, check box below. <input type="checkbox"/> < Check here to add HAZMAT/CBRNE Equip. Storage in this Satellite station.		
Spare PPE Storage is typically only provided in Main Sta. If required, check box below. <input type="checkbox"/> < Check here to add Spare PPE Gear Storage in this Satellite station.		
Select Vehicle Maint./Storage Bay (yes or no):	No	
Vehicle Maint./Storage Bay includes Vehicle Maint. Office at:		
Vehicle Maint./Storage Bay includes Vehicle Maint. Equipment Storage at:		
Enter Fire Exting. Inspection (no. of stations):		
Select Non-Flightline Fire Exting. Maint. (yes or no):	No	
Select Flightline (FL) Fire Exting. Maint. (yes or no):	No	
Select FL Fire Exting. Covered Storage (yes or no):	No	
Air Force-only.		
Day Room and Residential Area		
Based on no. of Companies entered above, the Day Room is sized:	120.4	1,296
Select Dorm Room bed configuration	Two Beds	
Based on Total Dorm Room Count & bed configuration selected, the Dorm Room Area is sized: This provides space for the 'Two Beds' configuration (at 13.01 sm (140 sf) per room) for the following: 2 Structural Companies, 0 ARFF Companies, and 2 additional Dorm Rooms (for ambulance or rescue companies or other modifications).	130.1	1,400
Based on no. of Companies entered above, the Bathrooms are sized:	30.7	330
Based on no. of Companies entered above, the Laundry Room is sized:	7.4	80
Based on no. of Companies entered above, the Fitness Room is sized:	40.6	437
Based on no. of Companies entered above, the Vending Area is sized:	3.7	40
Select Physical Therapy/Sauna (yes or no)	No	
Select Recreation Room (yes or no)	Yes	
	33.4	360
Training and Administrative Area		
Station Officer's Office/ Watch Desk	11.1	120

FIGURE C-2.3. SAMPLE COMPLETED INTERACTIVE WORKSHEET FOR A MARINE CORPS SATELLITE FIRE STATION (continued)

Sample Marine Corps Satellite Fire Station, MCB Camp Lejeune, Jacksonville, NC		
Fire Chief's Office is typically only provided in HQ Stations. If required, check box below. <input type="checkbox"/> < Check here to add Fire Chief's Office in this Satellite station.		<input type="checkbox"/>
Select Deputy Chief's Office (yes or no): <u>No</u>		
Lobby Area is typically only provided with the Fire Chief's Office. If required, check box below. <input type="checkbox"/> < Check here to add Lobby Area in this station.		<input type="checkbox"/>
Public toilet (ADA-compliant, unisex)	4.2	45
Admin. Asst. is typically only provided with the Fire Chief's Office. If required, check box below. <input type="checkbox"/> < Check here to add Admin. Asst. in this station.		<input type="checkbox"/>
Chief's Conf. Room is typically only provided with Fire Chief's Office. If required, check box below. <input type="checkbox"/> < Check here to add Chief's Conf. Room in this station.		<input type="checkbox"/>
Select Asst. Chief/ Shift Supervisor (yes or no): <u>No</u> * Note: This is usually only provided in HQ stations.		
Select Asst. Chief of Fire Prevention (yes or no): <u>No</u> * Note: This is usually only provided in HQ stations.		
Enter Inspector(s) Offices (no. of workstations): <u>2</u> * Note: This is usually only provided in HQ stations. If required at this Satellite station, enter the no. of workstations desired.	8.9	96
Select EMS Office (yes or no): <u>No</u>		
Select HAZMAT/ Safety Office (yes or no): <u>No</u> * Note: This is usually only provided in HQ stations.		
Select Logistics Office (yes or no): <u>No</u> * Note: This is usually only provided in HQ stations.		
Select Training Officer Office (yes or no): <u>No</u> * Note: This is usually only provided in HQ stations or in conjunction with a Dept. Training Room (see below).		
Enter Dept. Training Room (no. of people): <u> </u> * Note: This is usually only provided in HQ stations. If required at this Satellite station, enter the no. of people to be accommodated/trained (typically this no. is the total on-duty Department staff).		
Dept. Training Room includes Training Room Storage at:		
Satellite Computer Training/Testing Room (per four testing stations) Check here to delete Satellite Computer Training/Testing Room in this station. > <input type="checkbox"/>	13.0	140
General Admin Storage Check here to delete General Admin Storage in this station. > <input type="checkbox"/>	7.4	80
IT Room	1.9	20
Select EOC Situation Room* (yes or no): <u>No</u> * Note: This is usually only provided in HQ stations that are consolidated with Police/ Security and Emergency Medical Services (EMS).		
Air Force-only.		
Air Force-only.		
Air Force-only.		

FIGURE C-2.4. SAMPLE COMPLETED INTERACTIVE WORKSHEET FOR A MARINE CORPS SATELLITE FIRE STATION (continued)

Sample Marine Corps Satellite Fire Station, MCB Camp Lejeune, Jacksonville, NC						
Dispatch						
Enter no. of Dispatch stations (on-duty Dispatchers):	<input type="text" value=""/>	<table border="1"><tr><td>m²</td><td>ft²</td></tr><tr><td></td><td></td></tr></table>	m ²	ft ²		
m ²	ft ²					
Dispatch includes Dispatch Bathroom at:	<input type="text" value=""/>	<input type="text" value=""/>				
Dispatch includes Dispatch Kitchenette at:	<input type="text" value=""/>	<input type="text" value=""/>				
Dispatch includes Additional IT Room Space at:	<input type="text" value=""/>	<input type="text" value=""/>				
Only available with Dispatch.	<input type="text" value=""/>	<input type="text" value=""/>				
Building Totals						
	Subtotal - Total Net Building Area	<table border="1"><tr><td>677.6</td><td>7,294</td></tr></table>	677.6	7,294		
677.6	7,294					
Net-to-Gross factor (modify as necessary):	<input type="text" value=""/> (factor at 0.22)	<table border="1"><tr><td>149.1</td><td>1,605</td></tr></table>	149.1	1,605		
149.1	1,605					
<small>* The net-to-gross factor accounts for circulation space, mechanical space, and wall thicknesses. The net-to-gross multiplier for Fire Stations may vary from 18% to 22% depending on the size of the Apparatus Room relative to the rest of the facility. Typically, the larger the Apparatus Bay, the lower the multiplier and vice versa. However, carefully consider the entire building configuration before changing the factor from the default setting of 22%.</small>						
Summary for Marine Corps Fire Station: Type of Facility = Structural Class of Facility = Satellite Total Dorm Room Count = 10 Total No. of Apparatus Bays = 2	TOTAL GROSS BUILDING	<table border="1"><tr><td>826.7</td><td>8,899</td></tr></table>	826.7	8,899		
826.7	8,899					
Site						
Based on selections entered above, Staff Parking is sized:		<table border="1"><tr><td>836.1</td><td>9,000</td></tr></table>	836.1	9,000		
836.1	9,000					
Based on selections entered above, Visitor Parking is sized:		<table border="1"><tr><td>83.6</td><td>900</td></tr></table>	83.6	900		
83.6	900					
Based on selections entered above, Bicycle Rack Area is sized:		<table border="1"><tr><td>14.9</td><td>160</td></tr></table>	14.9	160		
14.9	160					
Based on selections entered above, Site Approach to Apparatus Bays is sized:		<table border="1"><tr><td>371.6</td><td>4,000</td></tr></table>	371.6	4,000		
371.6	4,000					
Based on selections entered above, Agent Storage (ARFF) is sized:		<table border="1"><tr><td></td><td></td></tr></table>				
Based on selections entered above, Agent Storage (Structural) is sized:		<table border="1"><tr><td>4.5</td><td>48</td></tr></table>	4.5	48		
4.5	48					
Based on selections entered above, Patio is sized:		<table border="1"><tr><td>13.9</td><td>150</td></tr></table>	13.9	150		
13.9	150					
	TOTAL GROSS SITE SUPPORT	<table border="1"><tr><td>1,324.6</td><td>14,258</td></tr></table>	1,324.6	14,258		
1,324.6	14,258					
	TOTAL GROSS FACILITY (BUILDING + SITE SUPPORT)	<table border="1"><tr><td>2,151.3</td><td>23,157</td></tr></table>	2,151.3	23,157		
2,151.3	23,157					

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APPENDIX D FIGURES

D-1 INTRODUCTION.

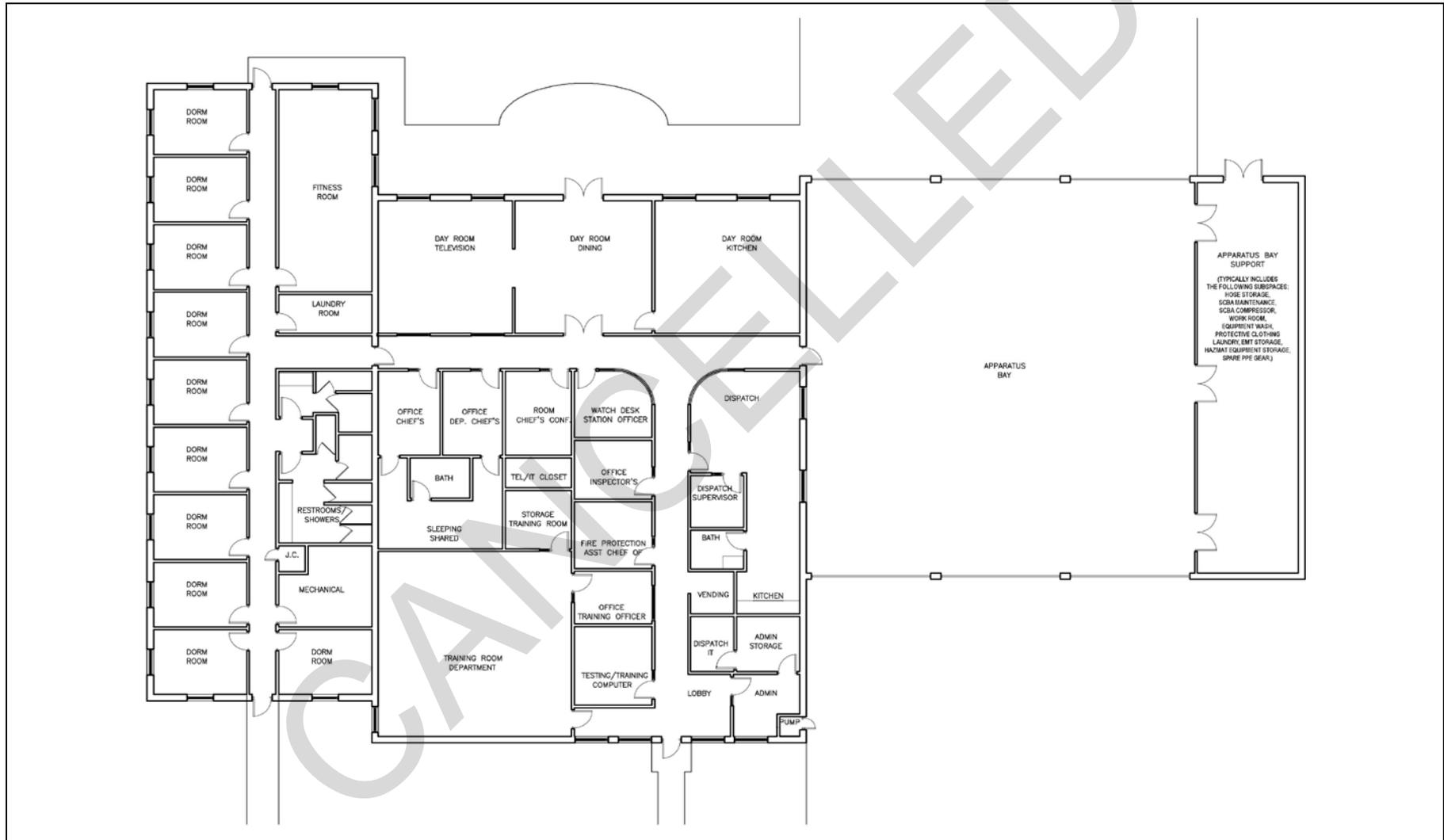
The Figures in this Appendix do not represent mandatory or even suggested floor plans and layouts. They are provided to illustrate possible means to accommodate the overall needed adjacencies and the room layouts. Note that the written criteria in this FC take precedence over these figures. If there is any confusion between the text and the figures, follow the guidance outlined in the text.

D-2 HEADQUARTERS STATION CONFIGURATION.

Figure D-2 represents one possible configuration for a small, structural two-company Headquarters Station. This example is diagrammatic only, and does not include all required spaces nor is it intended to be used as a floor plan for a new facility design.

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FIGURE D-2. HEADQUARTERS STATION



D-3 APPARATUS BAYS.

The key drivers behind the size and configuration of the Apparatus Bays are the truck sizes and the required clear area around the vehicle footprint. Paragraph 2-2.2.1 gives the standard truck sizes and their relative footprints. The diagrams in Figures D-3.1 through D-3.4 illustrate the required clear area around each vehicle size class.

Each diagram has three possible configurations: a truck parked between two walls, a truck parked between a wall and another truck, and a truck parked between two other trucks. This is due to the different set-off distances for a wall versus another vehicle.

FIGURE D-3.1. LARGE VEHICLE CLASS

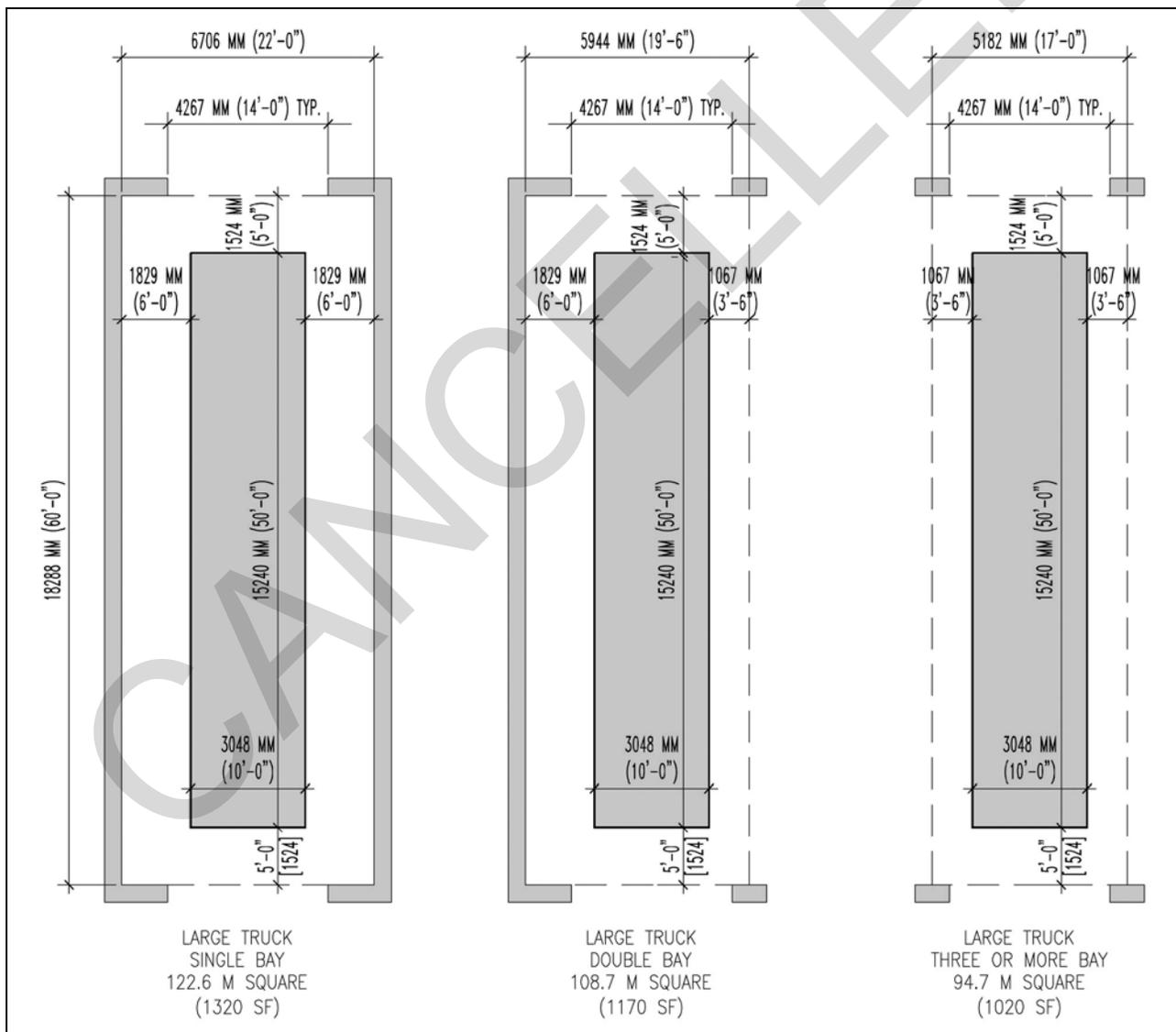


FIGURE D-3.2. MEDIUM VEHICLE CLASS

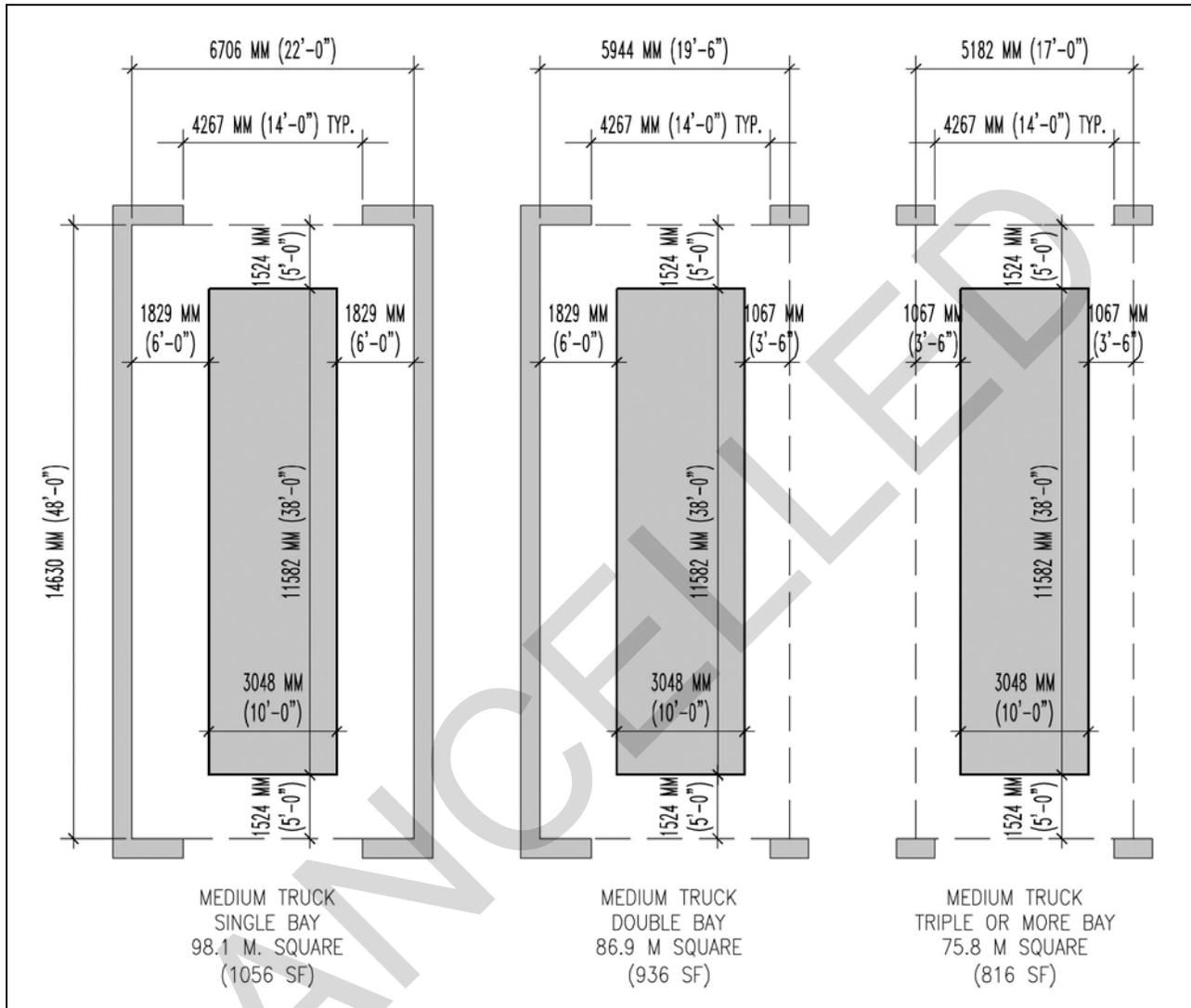


FIGURE D-3.3. LARGE ARFF (WIDE) VEHICLE CLASS

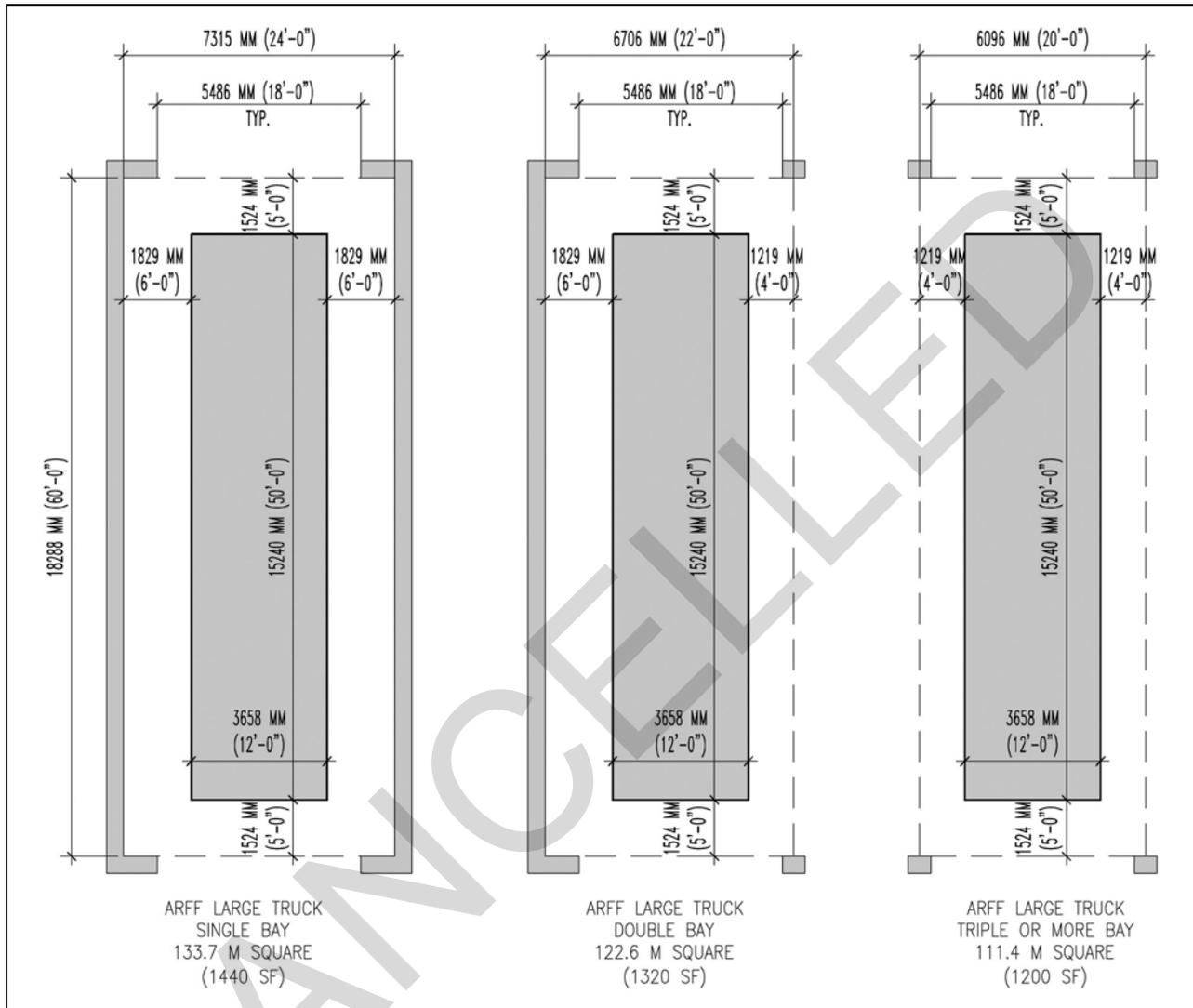
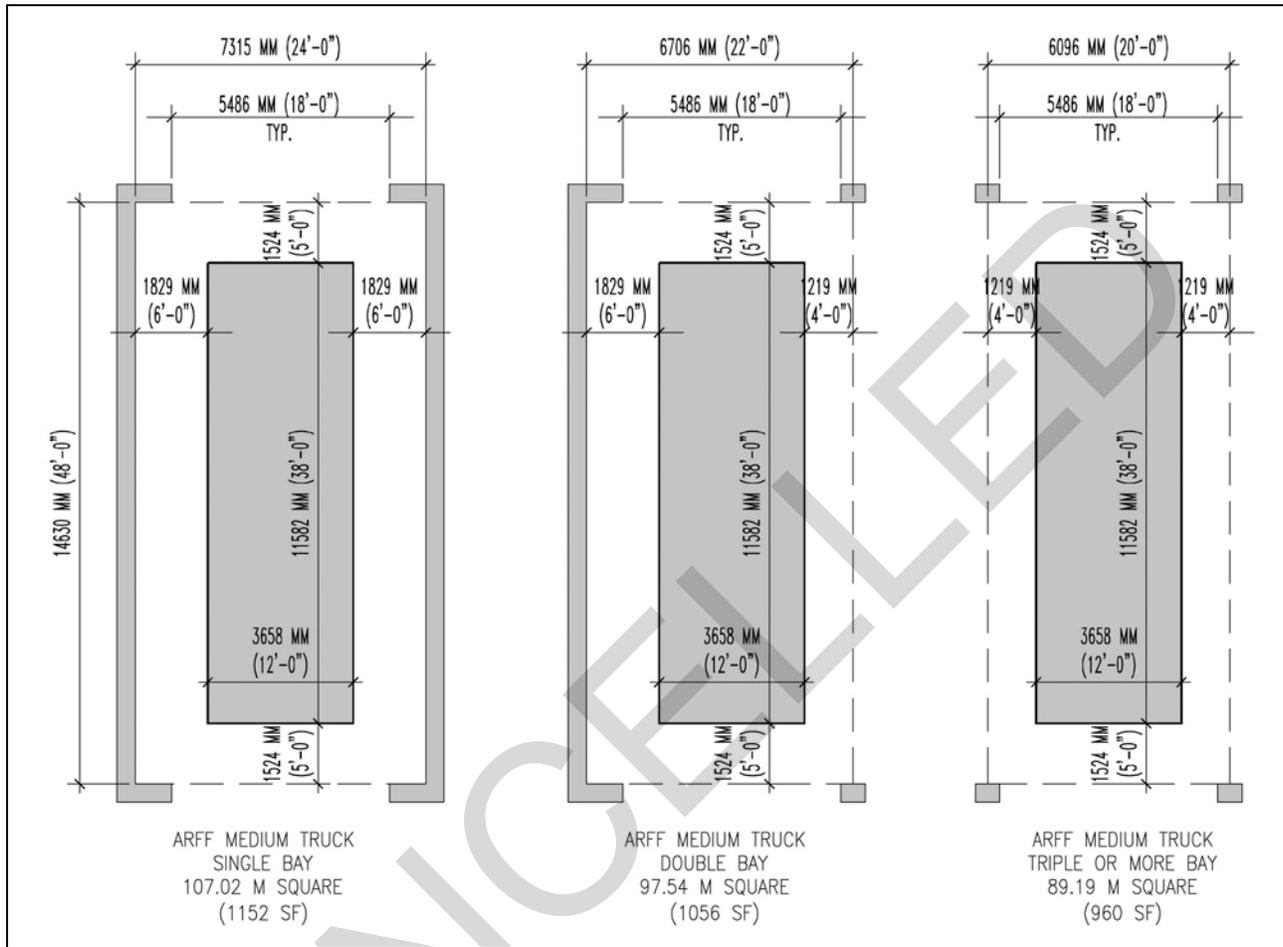


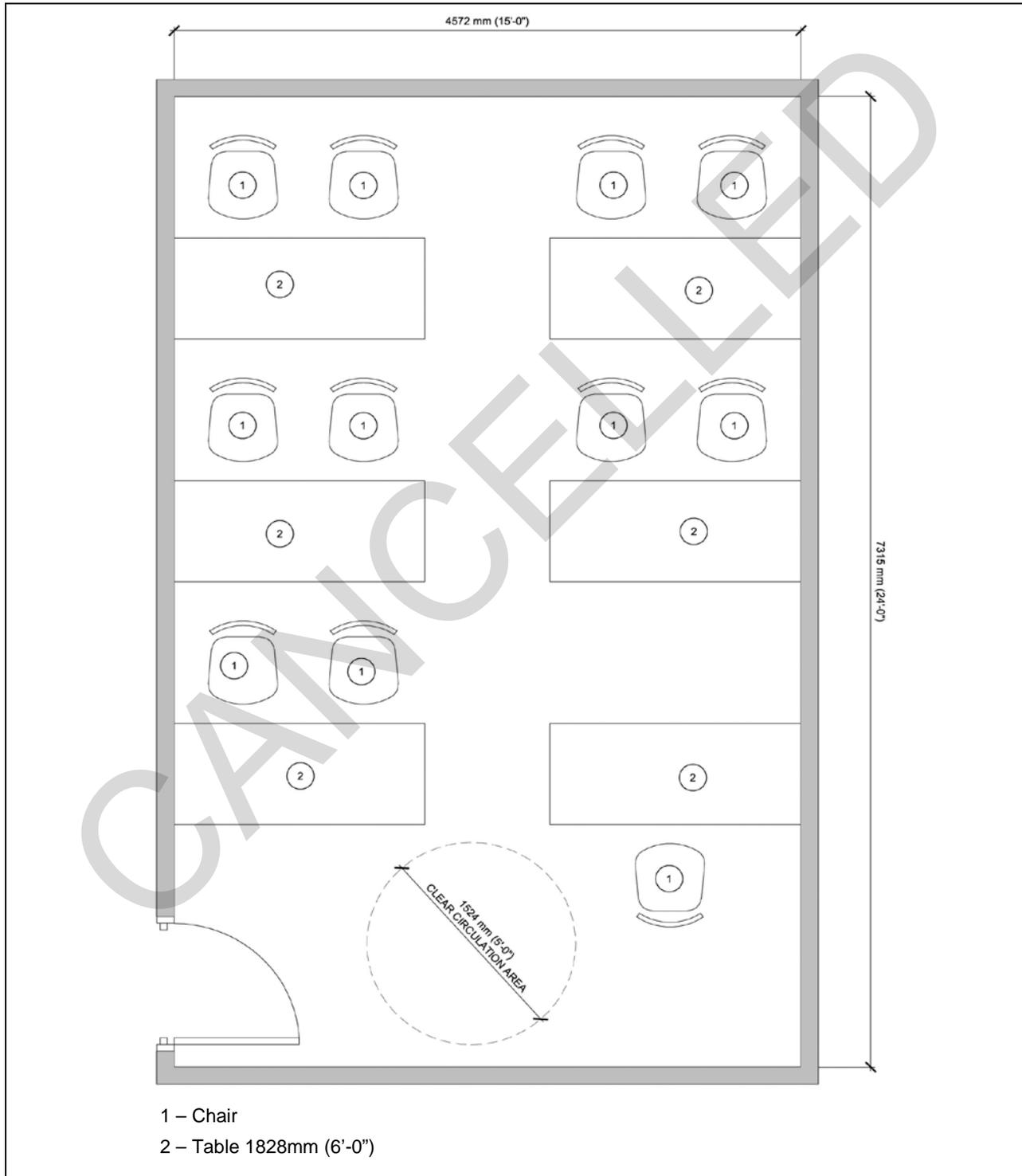
FIGURE D-3.4. MEDIUM ARFF (WIDE) VEHICLE CLASS



D-4 DEPARTMENT TRAINING ROOM.

Figure D-4 illustrates a possible configuration for the Department Training Room. This room should be sized to accommodate the total on-duty population of the Department.

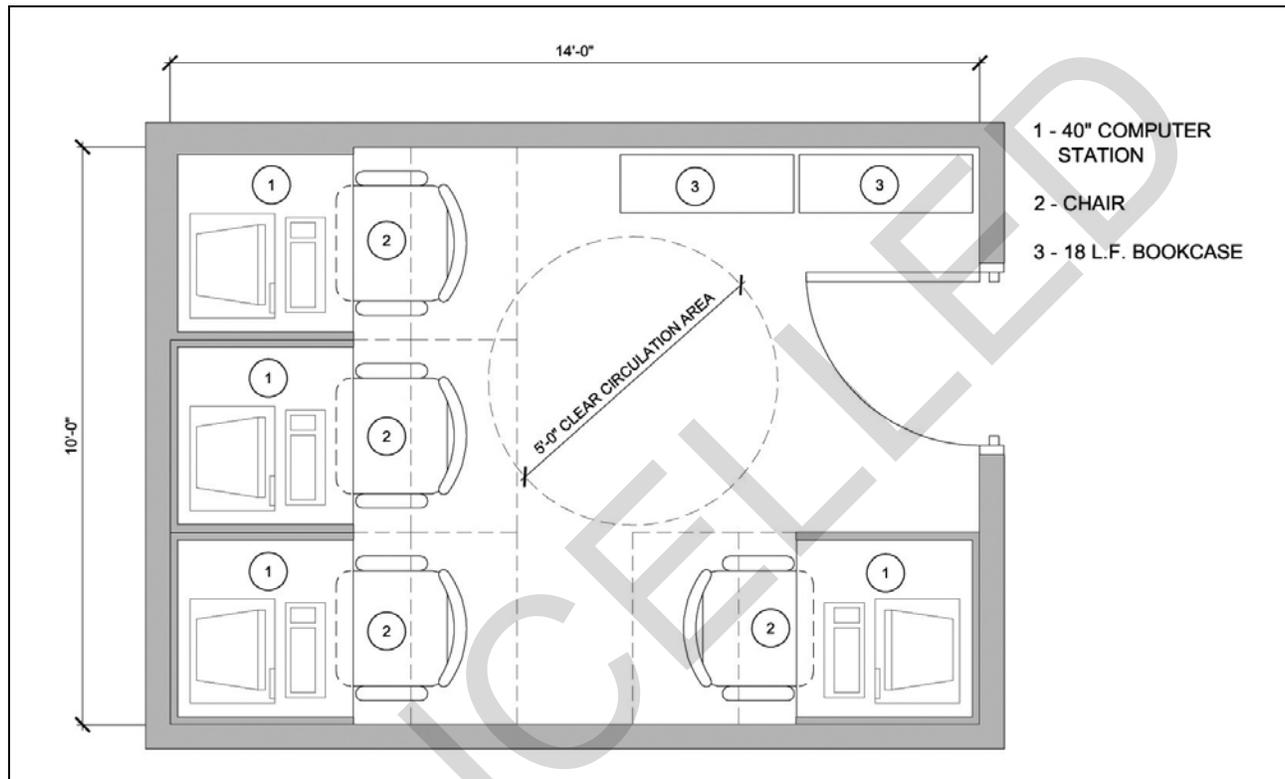
FIGURE D-4. DEPARTMENT TRAINING ROOM.



D-5 TESTING/INDIVIDUAL STUDY AREA.

Figure D-5 illustrates the Testing/Individual Study area.

FIGURE D-5. TESTING/INDIVIDUAL STUDY AREA.



D-6 DISPATCH ROOM.

Figure D-6.1 illustrates a small Dispatch Room with two dispatchers and a dedicated toilet. Figure D-6.2 illustrates a larger Dispatch Room with three dispatchers, the Dispatch Supervisor office, the dedicated toilet, and the dedicated Kitchenette.

FIGURE D-6.1. SMALL DISPATCH ROOM.

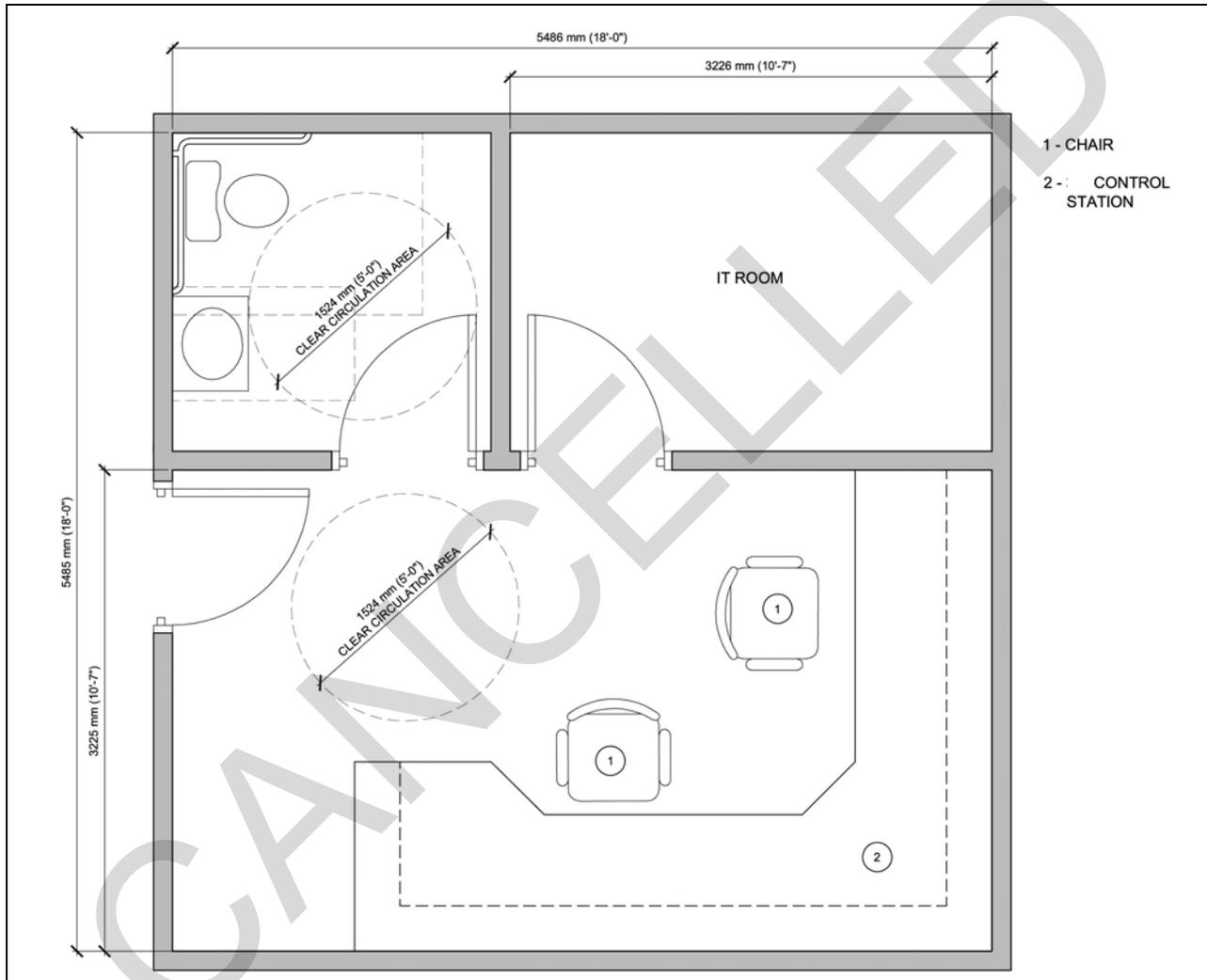
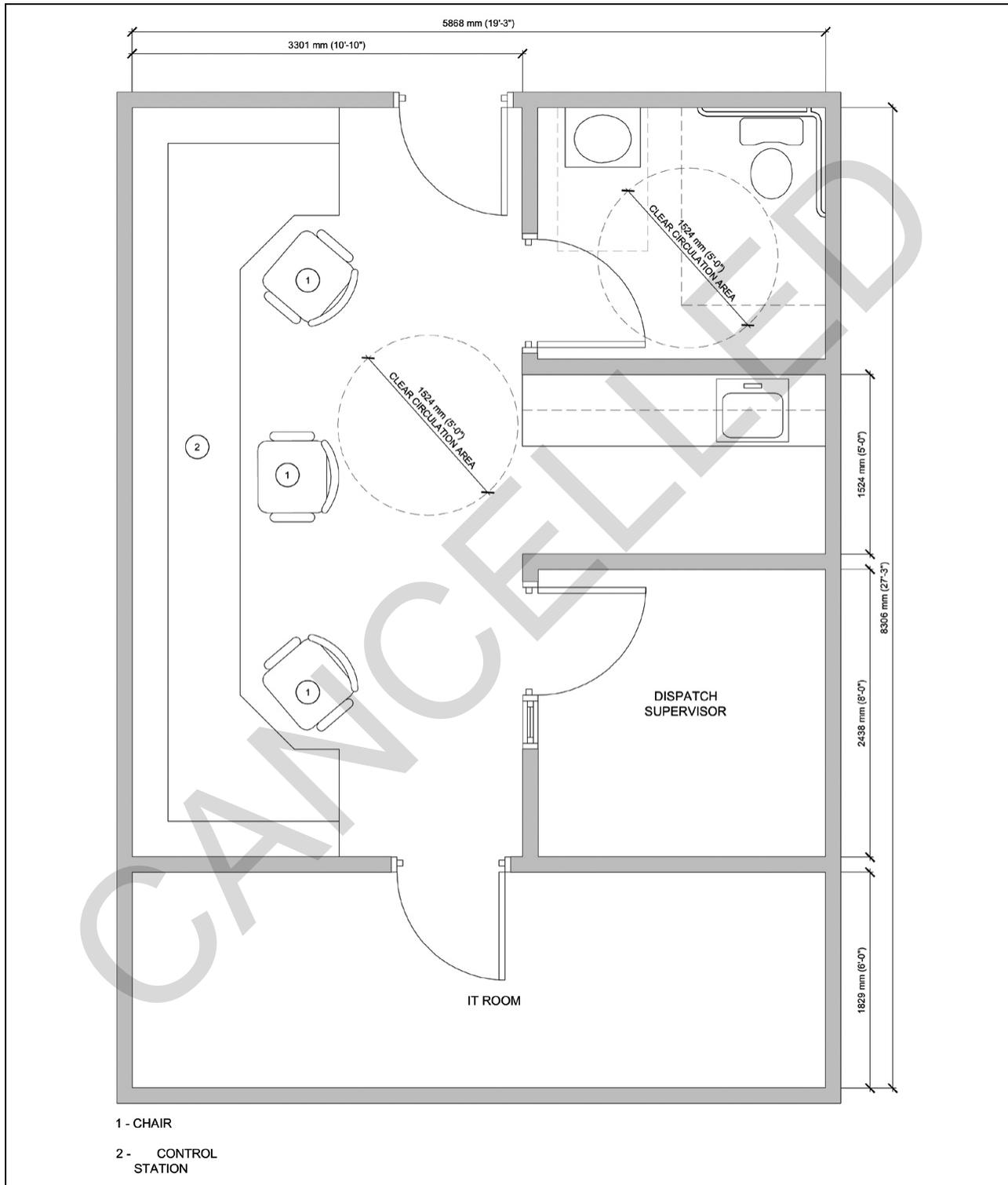


FIGURE D-6.2. LARGER DISPATCH ROOM.



D-7 DAY ROOM.

The Day Room illustrated in Figure D-7.1 is sized for one staffed vehicle (company). It will grow in modules of this size in direct relationship to the number of companies housed in the station. The dining portion of the space will double as a training area in smaller stations. Figures D-7.2 through D-7.4 illustrate the individual components in greater detail.

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FIGURE D-7.1. DAY ROOM

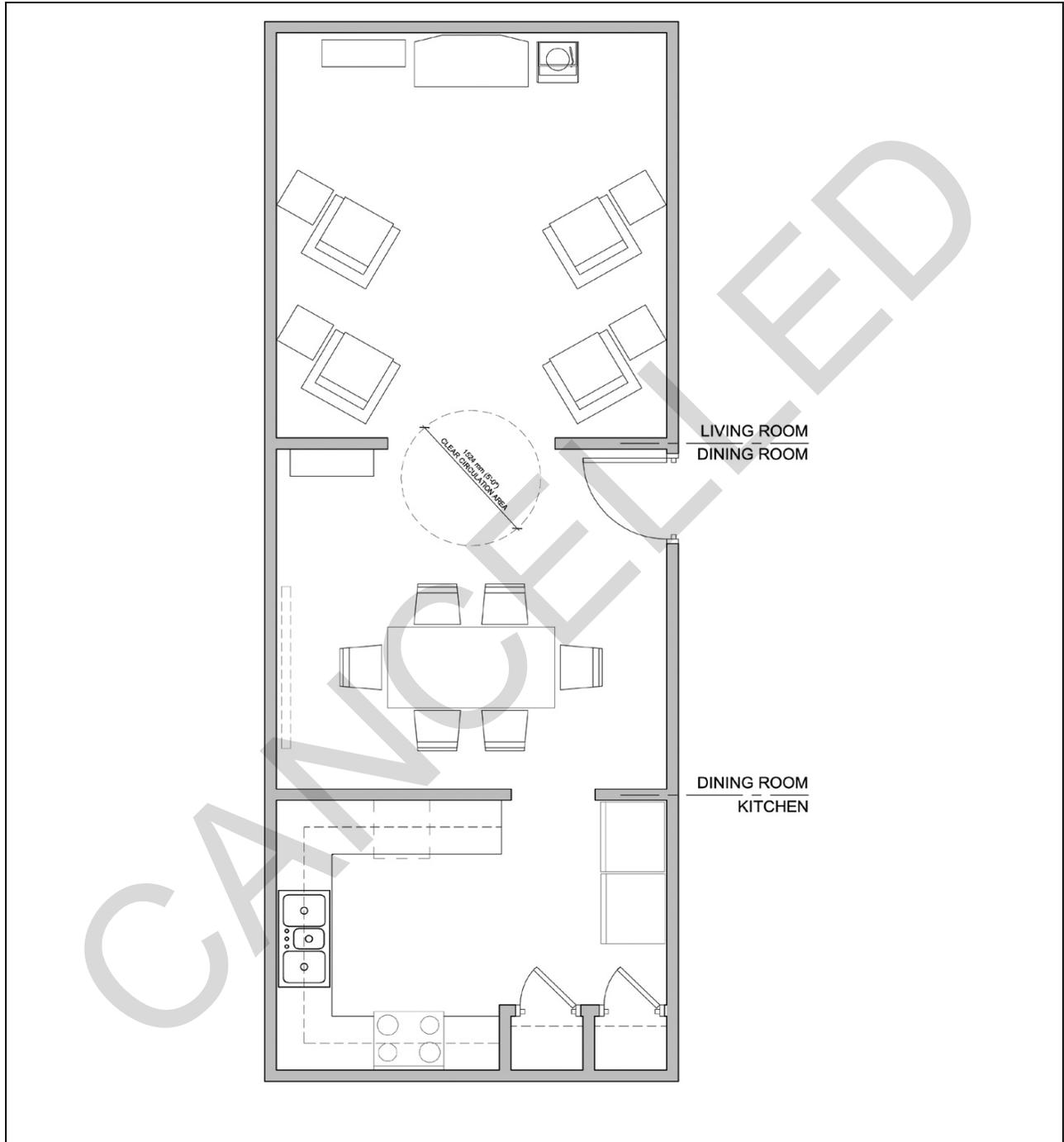


FIGURE D-7.2. DAY ROOM – KITCHEN

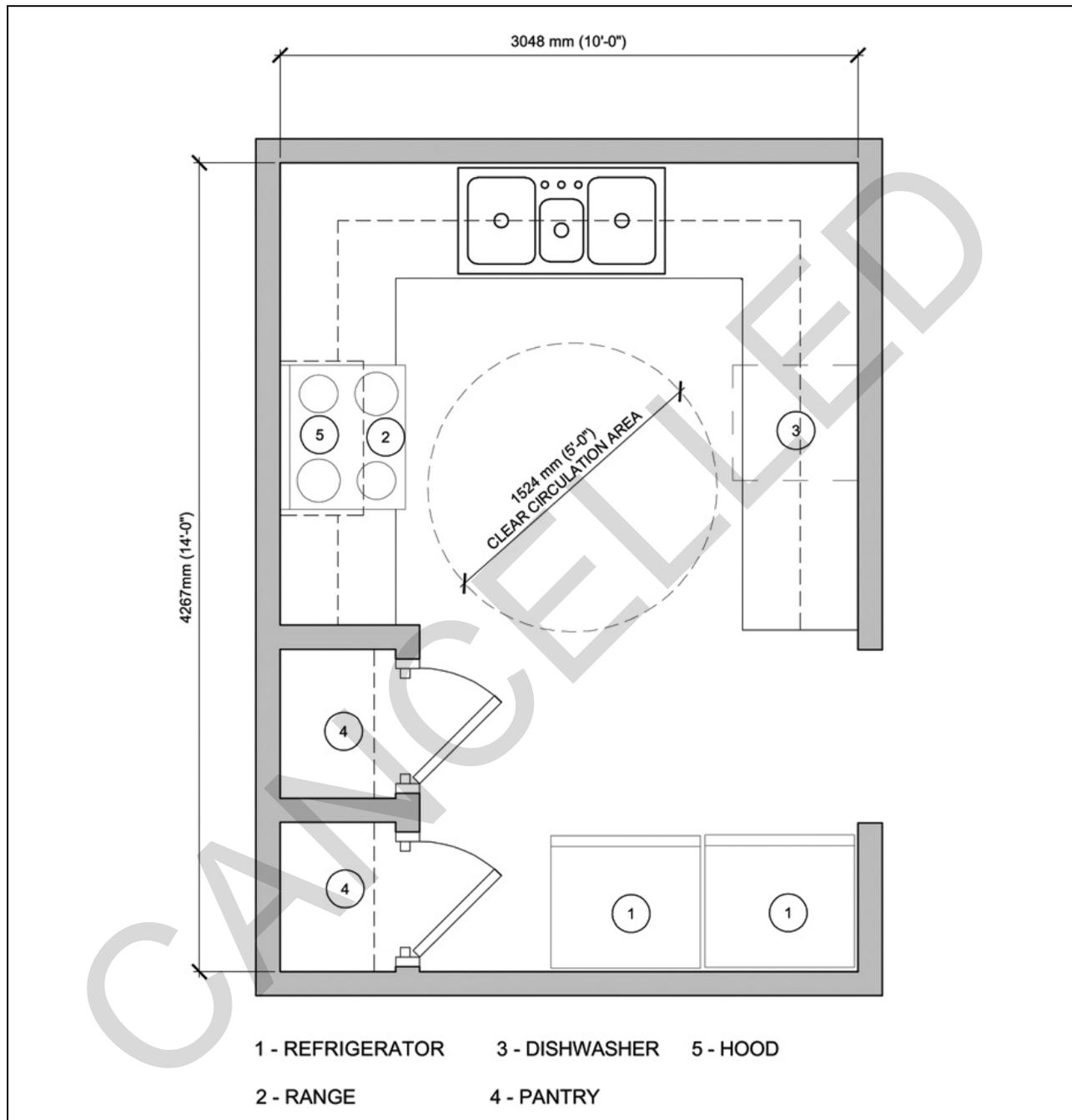


FIGURE D-7.3. DAY ROOM – DINING/TRAINING AREA

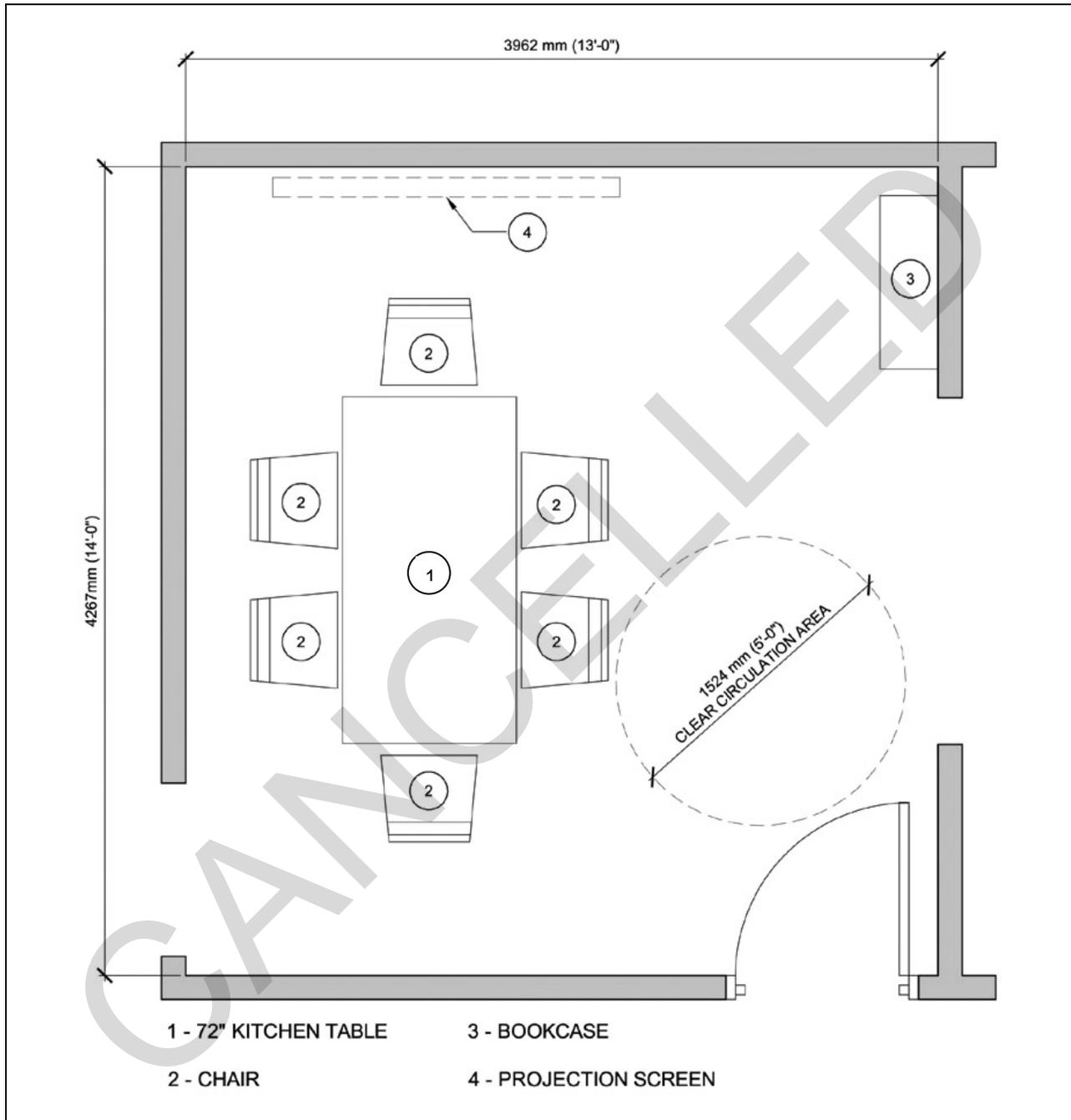
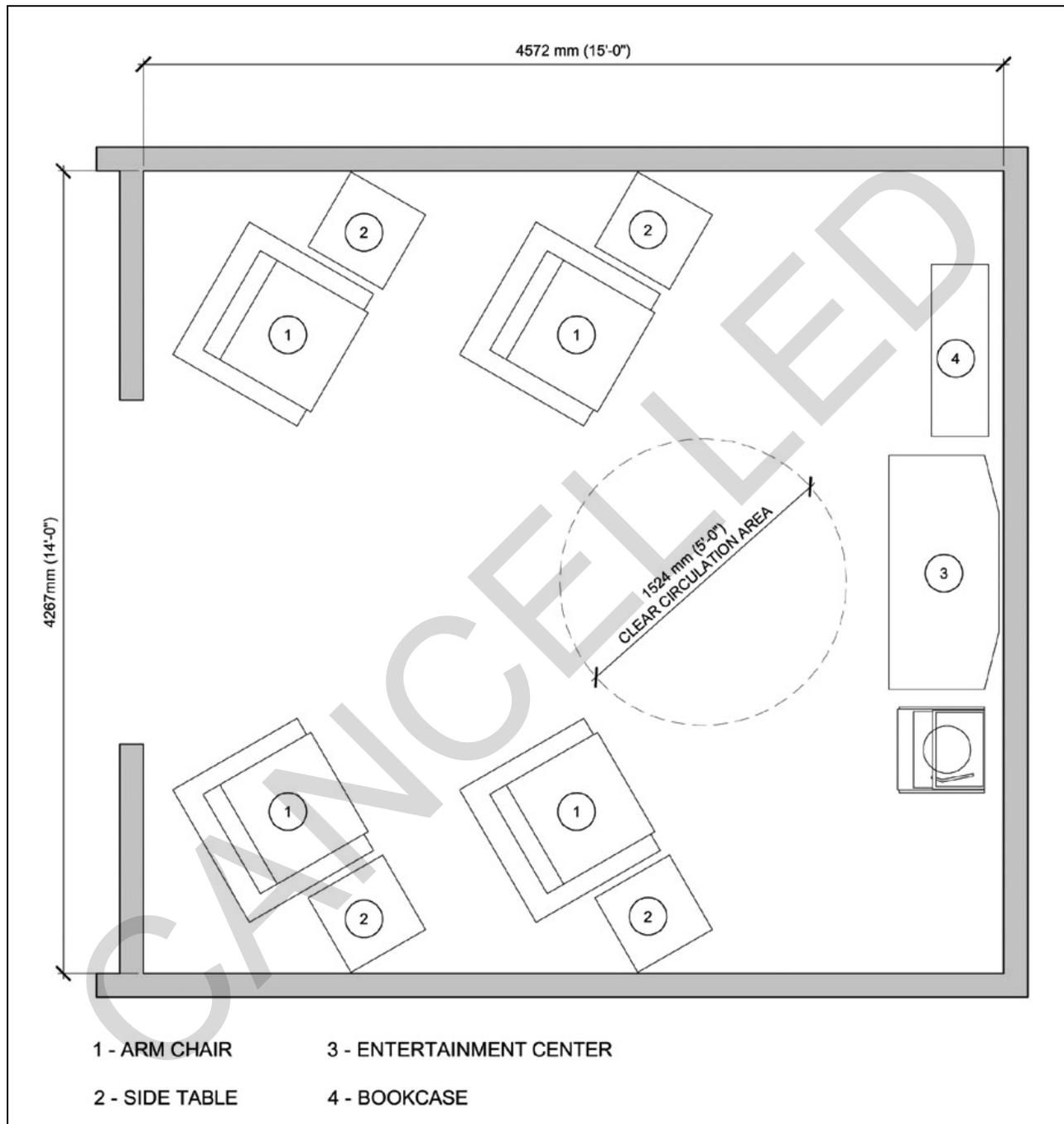


FIGURE D-7.4. DAY ROOM – LIVING ROOM AREA



D-8 DORM ROOMS.

Three options are presented as possible layouts for the Dorm Rooms. Figure D-8.1 illustrates a more traditional layout with one bed and two lockers. The bed is shared between the two shifts—with linens stripped after each shift—but each shift firefighter has his or her own locker/wardrobe.

However, there is a trend toward providing separate beds for each shift in order to improve quality of life. Therefore, Figure D-8.2 illustrates this scenario with each shift firefighter having his or her own bed. Figure D-8.3 illustrates a more space efficient approach to providing separate beds by using a fold-up or “Murphy” bed.

FIGURE D-8.1. DORM ROOM WITH ONE BED

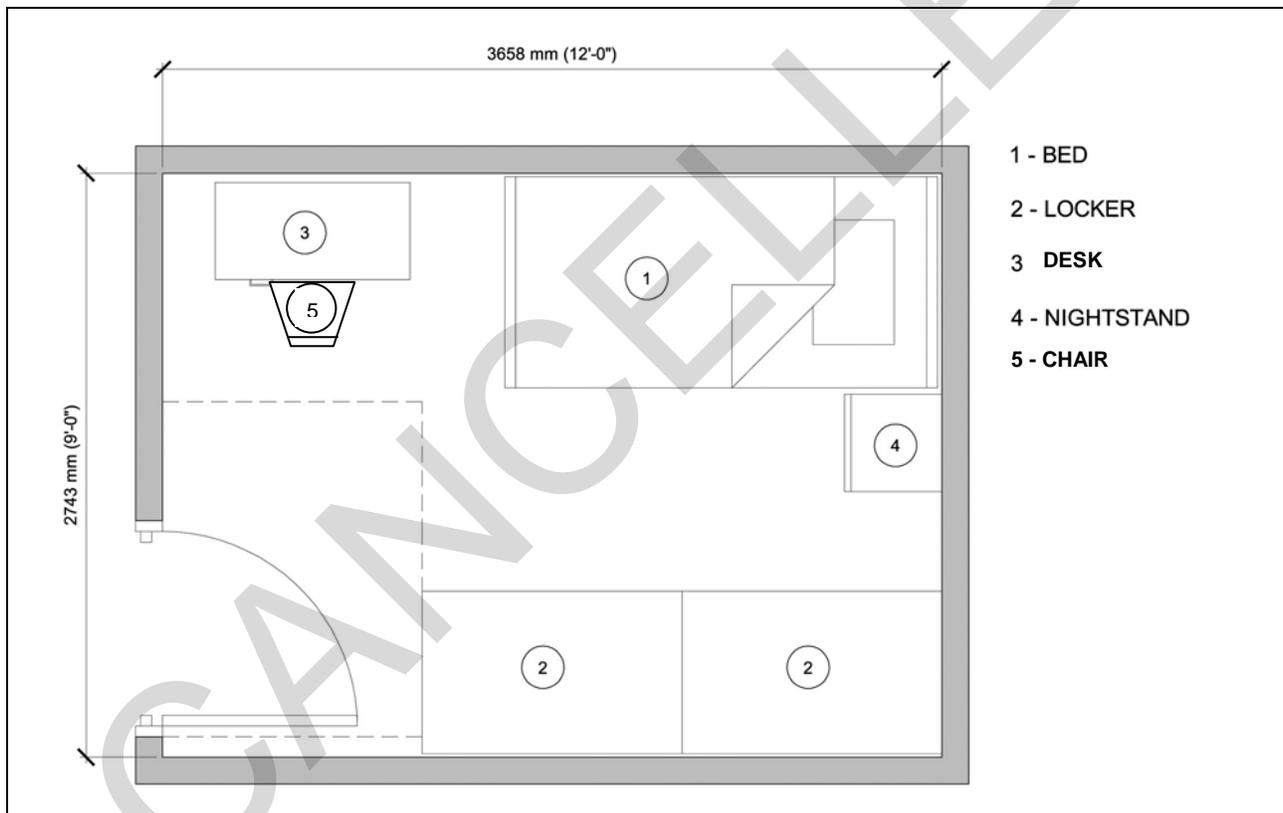


FIGURE D-8.2. DORM ROOM WITH TWO BEDS

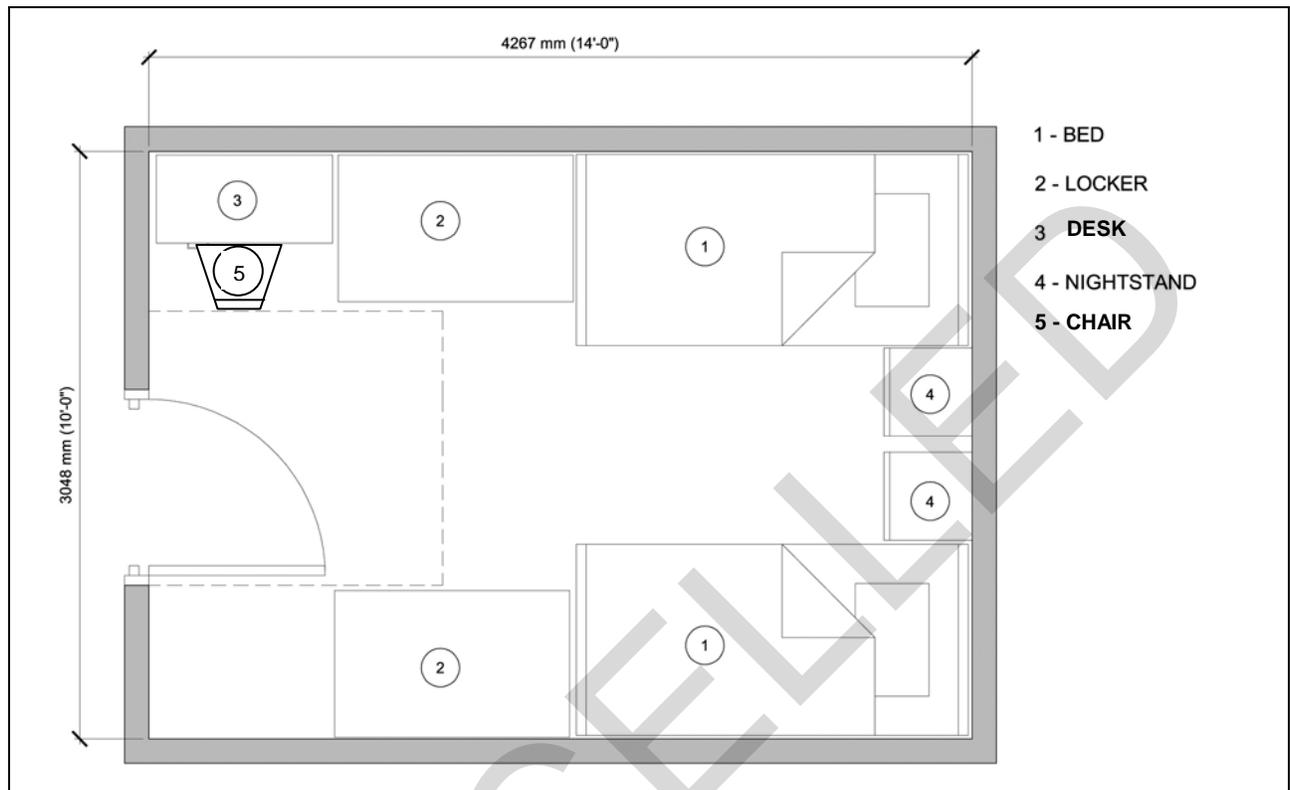
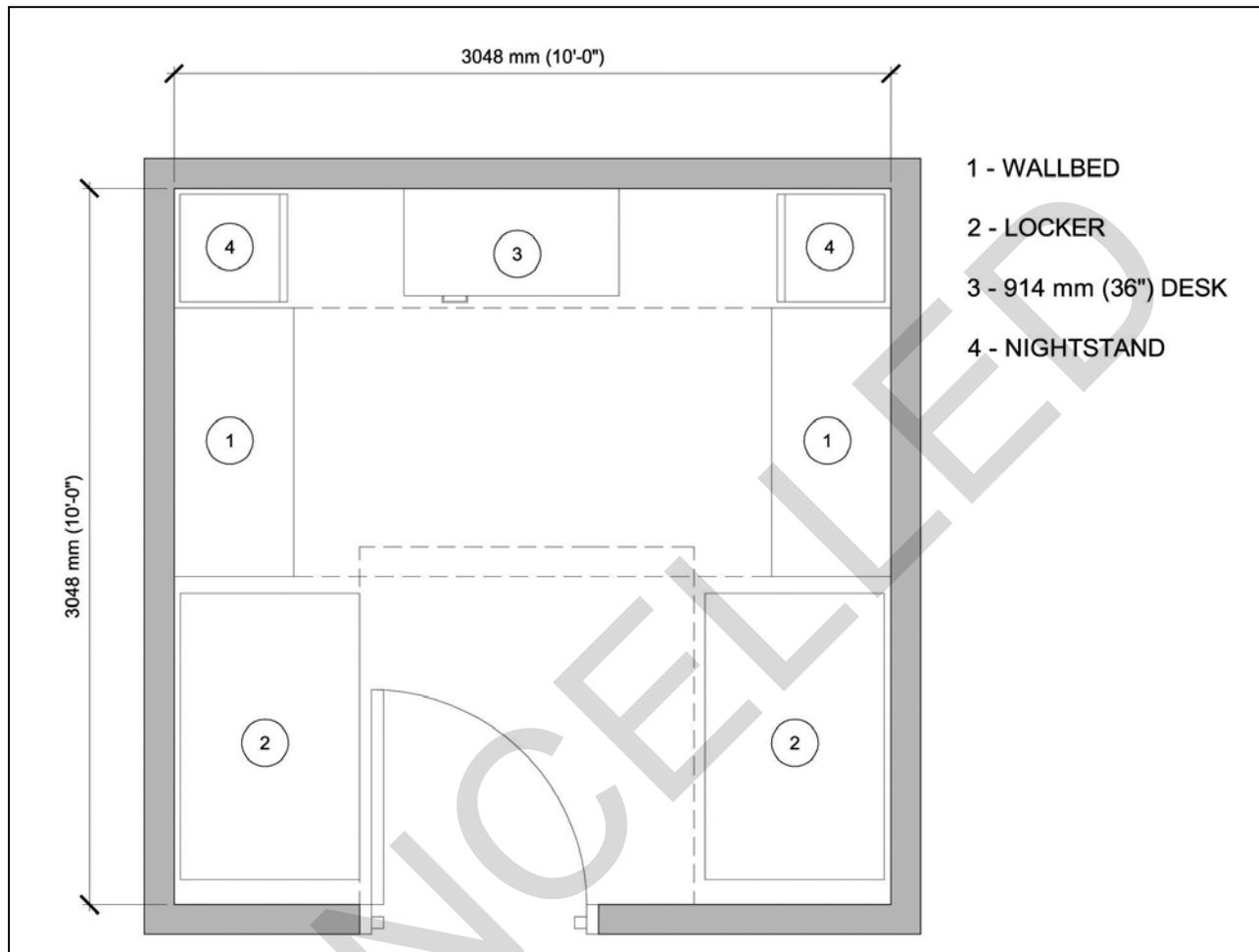


FIGURE D-8.3. DORM ROOM WITH TWO FOLD-UP BEDS



D-9 FITNESS ROOM.

The Fitness Room illustrated in Figure D-9 is set up to accommodate one company exercising at a time. Therefore, it can accommodate four people on aerobic fitness machines and strength training with a Universal machine and free weights.

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FIGURE D-9. FITNESS ROOM

