DEXTER AREA
FIRE & EMERGENCY
SERVICES

DEXTER CITY
FIRE STATION PROJECT
RECOMMENDATION

December 28, 2020

Fire Chief Statement.

Document Purpose: This document represents the Fire Chief's opinion and recommendations as a conceptual starting point for a new Fire Station to serve the residients within the City of Dexter and the Dexter Area Fire Department response area. It provides the administrator a long term solution to the Fire Department facility with emphasis and consideration for the political and financial constraints that are inherent in the Interlocal Agreement provisions that the City of Dexter is a welcome partner in. While there is room for debate, alterations, and discussion regarding many points within this document, I believe conformance to the the outlined requirements will set the City of Dexter and the Dexter Area Fire Department up for a successful future and provides for a long term fiscal efficiency.

Fire Stations are some of the most complicated facilities design and construct. Seemingly small changes to one area can result in significant modifications to other areas. Fire Stations have icterical passive design elements that affect employee health, service delivery, effectiveness, efficiency, and in some cases insurance ratings. All adjustments to the generally recognized standards cited within this document should be very well research and thought out prior to implementing.

Please feel free to contact my office with any questions regarding the contents of this document.

Robert L. Smith

Robert L. Smith, EFO, CFO
Fire Chief, Dexter Area Fire Department

DESIGN DOCUMENTS

Project: Design and build a new Fire Station Facility for use by the Dexter Area Fire Department.

Scope: Develop a permanent (30 - 40 year life span) structure that meets state and federal health and safety requirements for a full-service fire department, enhances fire protection operations, and increases the safety and well-being to the citizens of the City of Dexter while maintaining fiscal responsibility.

PROJECT OVERVIEW

The City of Dexter has implemented a planning process for the acquisition of a new fire station for the community.

All design considerations take into account that housing will be needed for eight (8) pieces of apparatus and other rolling stock equipment. This equipment includes:

Primary

1 Fire Engine	2 Water Tankers	1 Rescue Squad
1 Utility Truck	1 Gator and Trailer	1 Brush Truck
1 Aerial Apparatus		

Additional Equipment Possibilities

1 Fire Prevention Smoke House	1 HART Emergency Response Vehicle
1 Ambulance	1 Sheriff Car

Additionally, the current staffing level includes ten full-time fire fighters and up to 25-part-time fire fighters. The station is staffed by two personnel on a 24-hour basis, one Fire Chief and one Administrative Assistant.

When planning and programming for the fire station, functions fall into three main categories: *maintenance and apparatus*, which includes fire protection vehicle storage, maintenance, repair, and supply support; *administration and training*; which includes offices, record storage, fitness, and classroom space; and the *general residential and "living" areas*, which should be separate from business functions. The Dexter Area Fire Department is a full-service fire department; therefore, accommodations will be required for Staff Officer Administration, Fire Prevention (Inspection, Plans Review, and Public Education), Training, and Apparatus Maintenance.

The project should include consideration for Cancer Prevention to include establishing "Hot", "Warm", and "Cold" zones in the overall design.

The City does have an adequate water supply system (hydrants) to support fire operations.

As part of the design and construction process, the following guidelines should be applied to the maximum extent possible:

- Michigan Occupational Health Requirements to include Part 74, Fire Departments

- National Fire Protection Association (NFPA) Codes and Standards with particular emphasis on meeting the requirements of NFPA 1500
- Michigan Building Code/International Code Council
- Americans with Disabilities Act
- Davis-Bacon Act (40 U.S.C.A §§ 276a to 276a-5)
- GSA Guiding Principles for Sustainable New Construction and Major Renovations (National Institute of Building Sciences)

In the Michigan Building Code, Fire Stations are considered essential facilities and must therefore be constructed to meet Chapter 16 of said code. Internal areas include mixed occupancies with a great array of code requirements that must be blended. Fire stations are classified as a "Mixed Occupancy" essential facility as an occupational Category 4 asset.

Consideration will be given to projects that implement the Guiding Principles for Sustainable New Construction and Major Renovations. Projects that recognize registration or certification at the Silver, Gold, or Platinum level as recognized by the Unites States Building Council Leadership in Energy and Environmental Design (LEED) program will be evaluated on a cost verses benefit analysis. Initial design proposals should include cost break downs of various options to be considered by the City.

Architectural preferences include a brick and/or masonry exterior structure that has curb appeal to City residents and is durable for a long lasting low maintenance exterior. The Apparatus Bay should be relatively open with limited interior obstructions such as roof supporting columns. A two-story structure may be considered. Estimated square footages identified in this document may be changed significantly based on design, combining rooms and functions and technological improvements.

Overall, the fire station must represent a desirable place for off-duty personnel to spend time, visit often, and gather in a social setting. Living areas and physical fitness facilities should present a home and leisure type of feeling. The feel and design of the station should be such that Paid-on-Call personnel enjoy a presence in the facility even when not engaged in emergency respone or training.

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CHAPTER 1 - INTRODUCTION

PURPOSE

This design guide provides the basic criteria to evaluate, plan, program, and design the Dexter City Fire Station. This information is intended to make City Officials and designers aware of the unique functional design requirements for the fire station and to provide a basis for developing construction plans for the facility.

FIRE STATION OVERVIEW

Fire stations support the fire fighters' mission to provide fire protection and fire prevention services to the citizens of Dexter City and provide a safe work and training environment to the firefighters. To support the firefighters' mission, it is crucial that the design of all fire station facilities accommodate the equipment, the numerous unique functional requirements, and safety of the firefighting personnel.

CHAPTER 2 – GENERAL FIRE STATION CRITERIA

A. FUNCTIONS, SPACE CRITERIA

1. MAINTENANCE AND APPARATUS

a. APPARATUS ROOM. Enclosed area to house fire protection vehicles.

b. MAINTENANCE, REPAIR, STORAGE, AND SUPPORT. Area for vehicle maintenance office and vehicle maintenance parts, fire-fighting agent storage, hose storage and drying area, fire extinguisher shop, self-contained breathing apparatus shop (SCBA), protective clothing lockers and laundry. Areas also for general storage, medical storage, janitorial areas, mechanical/electrical/ telephone/compressor rooms, and circulation. Include disinfecting facilities for emergency medical equipment.

2. ADMINISTRATION AND TRAINING

a. ALARM COMMUNICATION CENTER/WATCH ROOM. Area for communications control room, emergency response center, and telecommunications/computer room.

b. TRAINING FACILITIES. Areas for educational training and physical fitness. Office for Training Officer, Classroom, and space for audiovisual/equipment storage should be included.

c. ADMINISTRATION. Space for offices to support the Fire Chief, Fire Prevention, Operations, Health and Safety, EMS, and Equipment Maintenance. Additional areas for document storage, processing, and copying is essential. Entrance/reception areas and public restrooms.

3. RESIDENTIAL AND LIVING AREAS

a. LIVING QUARTERS. Includes private bedrooms, personal lockers, rest rooms/showers, and laundry.

b. RECREATION / DINING. Space for television viewing, quiet study, day room, kitchen, kitchen storage, vending, and dining area.

B. SPACE CRITERIA

1. RECOMMENDED SPACES AND SIZES. The recommended sizes and spaces are reflective of the Fire Chief's opinion and generally recognized industry standards with regard to new processes, equipment, and future requirements to the best of his knowledge. Final design and clustering of functional areas may create an increase or reduction in overall square footages.

2. DESIGN ISSUES AND RELATIONSHIPS. In developing the space criteria, the issues of overall project design discussed in Chapter 3 will be considered.

C. GENERAL SITE EVALUATION CRITERIA AND CONSIDERATIONS

1. LOCATION. Provide visual identity and access from a major roadway. Fire station site plans should include provisions for the following:

a. Vehicular turning radius at the front and rear of the facility

b. Apparatus driveway must be adequate for apparatus to park outside without obstructing any roadway or side walk.

c. Points of entry - Front door for public access. Additional entrances that consider Paid-on-Call staff entering the facility in an expeditious manner directly to Protective Clothing Storage and the Apparatus Bay area.

d. Street traffic must be limited such that responding personnel are not delayed getting to the Fire Station nor delayed responding out of the Fire Station.

e. Visitor parking that does not obstruct emergency response vehicle maneuvers.

f. Personnel parking that is distant from public parking and somewhat protected.

g. Delivery/service entrance that does not interfere with apparatus maneuvers.

h. Maintenance/storage areas outside the facility that are visually obscure.

i. Expansion Landscaping

j. Signage as necessary

2. SITE SIZE

a. Select a site large enough to provide adequate space for exterior functions and vehicles. Consideration for apparatus maneuverability, training, and maintenance function should be given. General industrial standards indicate that lost size should be based on one half (1/2) acre per each 5000 sq. ft. of building space for fire stations.

b. Prepare a preliminary site design to ensure the basic building and site criteria can be accommodated.

c. Room for future expansion should be considered.

d. Dexter City has some significant limitations in obtaining a site that fulfills the special need of a fire station. The City currently owns the largest building site available within the municipal boundaries.

3. ACCESS AND VISIBILITY

a. A site should have convenient access for both fire fighters and general public.

b. A site should be in a prominent and visible location.

c. Paid-on-Call personnel must be able to enter the facility quickly, enter the building and respond out just as quickly.

4. UTILITY SUPPLY REQUIREMENTS

a. Fire stations should be located near major utilities, including water, sewage, electricity, telephone, and gas lines.

D. SPECIAL PROJECT COSTS

1. In addition to the usual cost-estimating considerations, the following special factors also should be considered when establishing initial project cost projections. See relevant sections of Chapter 3 for discussion of specific design requirements for each factor and Chapter 6 for specific room or functional requirements.

a. Clear span, height, and structural floors in apparatus room.

b. Kitchen equipment requirements and special construction items such as public-address system equipment, fire suppression systems, vehicle exhaust extraction systems, and telecommunications equipment.

c. Numerous plumbing fixtures throughout the facility.

d. Noise transfer reduction between major spaces such as sleeping quarters and apparatus room may significantly impact project costs.

e. The mechanical system may need to satisfy particular zone control criteria.

f. Heavy-duty exterior paving or concrete for fire-fighting vehicles parking and driveways can create additional costs.

g. Alternative energy sources may be considered for this project if an annual cost savings can be demonstrated.

CHAPTER 3 - OVERALL PROJECT DESIGN

A. SITE DESIGN

1. SITE SELECTION

While the first thought in municipalities with one fire station is to place it in the middle of the geographical boundaries, it is not always the best choice and must be evaluated very carefully to ensure our citizens receive the most cost effective and efficient service we can provide. Determining the position of a fire station must take into consideration:

a. Historical call volume and location of incidents.

b. Traffic patterns within the city, such as street layouts and traffic lights.

c. The location of target or high hazard areas such as industrial sites, schools, and elderly care facilities.

d. Land usage and zoning requirements including current usage and future projections.

e. Future projected growth within the municipality both industrial and residential.

f. Annual budgetary considerations.

g. Proximity of the potential employee base for the fire department. Location away from the highest population density could delay fire fighter response. The probability that employees (fire fighters) would live in those areas is high. Consideration must be given for probability that locating a fire station away from that district could actually delay response due to excess travel time to pick up apparatus and equipment.

The City has tentatively chosen property located on Dexter – Ann Arbor Road near Mill Creek School. It is a site consisting of approximately 2 acres with a full array of utilities available.

Other sites were considered; however, the size, location and drawbacks outweighed the benefits. The existing site at 8140 Main Street and a site located on Dan Hoey Road were the most promising early on in the project. The Dan Hoey property is no longer available. While the existing site is appealing because it is "The" Fire Station for Dexter, the site simply does not have enough space and is located on a main thoroughfare with extremely heavy traffic which creates safety issues for responding fire fighters.

Other sites were looked at briefly; however, the Ann Arbor Road site is the only site in the city that encompasses at least 2 acres of property.

2. SITE ORGANIZATION

a. Locate the facility to comply with generally recognized industrial standards to ensure fire-fighting vehicle response to city residents and businesses. NFPA 1710 Response Criteria should be the standard.

b. Use dominant or attractive natural or built features of the site and its surroundings to help organize the site design. These may include items such as major ground forms, distinct landscapes, or patterns of existing structures.

c. Preserve and take advantage of natural site features such as topography foliage and rock outcroppings. Use landscape elements to help define the site and main entry and to present an attractive image for the facility.

d. Organize the site design to be compatible with the site planning and style of adjacent existing structures.

e. Locate the building to reflect local climatic conditions. For example, provide protection from undesirable winds and glare, expose activity areas to the sun in cold climates and shade from excessive sun in warm climates, and orient operable windows to take advantage of summer breezes.

f. Locate the building to take advantage of passive solar heating and any potential daytime lighting of administrative and recreation/dining areas.

g. Design the site to reduce impacts on surrounding properties.

3. ACCESS DESIGN

a. Ensure that dimensions of access roadways and service entrances accommodate vehicle sizes anticipated for fire station operations.

b. Provide privately owned vehicle (POV) parking spaces based on the total expected usage.

c. Provide five additional visitor parking spaces.

d. Locate parking areas so they do not dominate the main entrance and public image of the facility.

e. Apparatus parking ramps should be designed to support the weight of vehicles.

f. Parking surfaces should be asphalt or concrete.

g. Overhead area should be clear of wires or other obstructions.

4. SITE UTILITIES

a. Provide water, sanitary sewer, storm drainage system, plus natural gas service, or fuel oil system, whichever is used.

b. Provide electric, telephone, fire alarm and fire suppression systems.

5. LANDSCAPING

a. Provide landscaping that is low maintenance.

b. Landscape design should incorporate native and indigenous plants to extent possible and include, where necessary, a water-conserving irrigation system.

B. BUILDING DESIGN

1. BUILDING ORGANIZATION AND CIRCULATION. The following areas should be considered as individual rooms or combined functional areas. Possible rooms and specific requirements are found in Chapter 6.

Communication Center
Apparatus Bays
Training/Classroom
Audiovisual Storage
Private Bunkrooms
Rest Rooms/showers
Recreation Area
Vending
Kitchen Storage
Administration
Fire Chief's Office
Fire Prevention Office
Maintenance, Repair, Storage, and Support
Vehicle Maintenance (parts and tools)
Hose Storage and Drying
SCBA Maintenance and Repair
Protective Clothing Laundry
Medical Equipment Storage
Mechanical/electrical/telephone
Public and Private Corridors
Telecommunications/Computer Room
Training Facilities
Training Office
Physical Fitness
Personal Lockers
Laundry
Day Room
Kitchen
Dining Area
Entrance/Reception
Disinfecting Facilities
Fire Prevention Storage
Vehicle Maintenance Office
Fire-fighting Agent Storage
Fire Extinguisher Maintenance and Storage
Protective Clothing Lockers
General Supply Storage
Janitor's Closet
Air Compressor Room

2. ARCHITECTURAL CHARACTER AND INTERIOR DESIGN.

The architectural and interior designs of the fire station must be integrated. Both involve functional analysis and consideration of the appropriate environmental character,

building organization and circulation, and supervision and flexibility requirements, as well as finishes and furnishings.

a. The design should reflect the regional and local base architectural style or character.

b. Create a theme that applies continuously to the entire facility design from an overall architectural statement to specific interior design.

c. The fire station should present a cohesive architectural image. Continuity of space should be reinforced by space planning, building form, and development of elevation, materials, and details.

d. Be sensitive to the natural flow of sequenced spaces. Circulation paths should accommodate personnel and equipment.

e. Living quarters should have residential character.

f. Consideration should be given for low maintenance and high durability finish materials.

3. SUPERVISION AND SECURITY

a. The security of the fire station after business hours is controlled from the Communication Center/Watch Room. Keyless entry system should be considered; however, a keyed entry must be included. Building main entrances and apparatus bay doors require monitoring by a security camera.

b. External alerting equipment such as a door bell and telephone should be located near the main entrance for public use to alert staff to their presence.

4. FLEXIBILITY AND EXPANSION POTENTIAL

a. Design of the fire station should accommodate change and expansion without over-designing the initial project.

b. Training facilities should allow flexible layout of furnishings.

5. HANDICAPPED ACCESS

a. Consideration should be given to accommodations in administrative areas, including parking spaces, entrances, corridors, and rest rooms. Door hardware must be barrier-free and accessible to the physically handicapped in accordance with appropriate accessibility standards.

6. SIGNAGE

a. Provide exterior and interior signage in accordance with Dexter City and Washtenaw County requirements.

b. Regulation signs should be located where specific warning or prohibitory information is required.

c. Provide clearly identified handicapped access and signage.

7. TELECOMMUNICATIONS.

a. Data - Pre-wire for computers and printers. Provide a system of empty raceways with pull wire, outlets, and cabinets for future installations.

b. Telecommunications

1) Provide a telephone equipment room inside the building, separate from the mechanical room.

2) Provide pre-wiring for multiline telephones throughout the station.

3) Provide for equipment capable of receiving telecommunications display devices for hearing-impaired calls.

4) Provide for telephones in offices, private rooms, sleeping quarters, day room, apparatus, training, and emergency response rooms.

5) Provide exterior phone at the front entrance for general public to alert employees of someone needing assistance.

6) Locate the central intercom console in the Communication Center/Watch Room.

7) Provide an internal communications system throughout the facility with the following features:

- Hands-free phone
- Two-way intercom throughout the facility capable of addressing all rooms or a single room at one time, with on/off switches for speakers at selected rooms
- Speakers for outside recreation areas and front and rear of stalls
- Ceiling-mounted speakers
- Telephones capable of accessing public address system

c. A Station Alerting System shall be included that:

1) distributes radio traffic via the public-address system for a period of 3 minutes after activation.

2) turns on bunkroom and travel lighting to the bay area upon receipt of an alarm.

3) disrupts gas cooking device operation upon activation.

d. Video

1) Pre-wire for cable TV in the day rooms, dining areas, training room, alarm communications/watch room, all sleeping rooms and offices.

2) Provide entry area television to display public safety messages.

3) Provide an electronic sign in front of the Fire Station that gathers public attention for the display of Fire Prevention and Fire Department activities with remote programming within the Fire Station.

e. Additional more specific requirements are contained in Chapter 6.

C. BUILDING SYSTEMS, GENERAL CONSIDERATIONS

1. STRUCTURAL.

a. Select an economical structural system based on facility size, projected load requirements, and local availability of materials and labor. Consideration must also be given to wind, snow, seismic, geologic, frost line, and other site-specific conditions.

b. Select and design the structural system based on analysis of projected future needs. Future expansion requirements should be easily and economically accommodated. However, do not over-design the initial construction.

c. Design building structural modules to reflect space requirements, economy and subsystem dimensions (e.g., ceiling grid, masonry units, framing members, etc.). Consider clear-span versus multi-column supported roof structures for the apparatus room.

2. HEATING, VENTILATING, AND AIR CONDITIONING

a. Provide heating, ventilating, and air conditioning (HVAC) systems.

b. The station should be ventilated to prevent infiltration of fuel vapors and exhaust fumes from the apparatus room into the administrative and personnel living spaces. Vehicle exhaust removal may be area specific or source specific.

c. Provide a night setback system for the HVAC system.

d. Provide carbon monoxide alarms and automatic ventilation in apparatus room.

e. Provide zone controls for maintaining different environmental conditions in all functional areas and for operating systems in areas of the facility when other areas are closed.

f. Provide tamper-proof temperature sensors with remote adjustment.

g. An active solar space heating system and/or domestic hot water heating system may be considered only if after a solar assessment it results in a savings investment ratio of greater than one.

h. The HVAC system should be designed and constructed for easy maintainability and operation.

3. ENERGY MONITORING

a. Perform a life-cycle cost analysis of available energy sources in accordance with the appropriate standards. The uniform present worth factor and the fuel escalation rates should be the latest published by the Department of Energy.

4. PLUMBING

a. Provide domestic hot and cold water, sanitary and storm drainage, plus propane or natural gas systems. Include appropriate labeling in accordance with local, state and federal safety requirements.

b. Provide hot and cold-water bibs for every two vehicle bays.

c. Provide eye wash and shower in the apparatus room and vehicle maintenance areas.

d. Provide hot water temperature at 41C (105F) for general use, and 60C (140F) to kitchen for normal use and 82C (180F) for dishwashing purposes.

e. Provide floor drains in rest rooms, laundry, janitor's closets, kitchens, and two in the protective clothing laundry room.

f. Provide shut-off valves at all fixtures.

g. Do not provide a drinking fountain in the apparatus room, however, provide a drinking fountain and electric water cooler near the entrance reception area.

h. Provide a general purpose building air compressor for the SCBA maintenance, fire extinguisher maintenance, and the apparatus room. Intake air must be located away from the following:

1) Any contaminated air sources
2) Vehicular exhaust fumes

3) Emergency generator
4) Rest room and kitchen exhaust
5) Mechanical exhausts

i. Provide frost-free hose bibs on all exterior walls.

j. Provide metering for gas and water service in coordination with local utility companies.

k. Provide grease traps for kitchen drains.

l. Provide oil separators at drains in apparatus rooms, protective clothing laundry, and maintenance areas. Locate the oil/water separator in the apparatus room for easy maintenance and cleaning.

m. Provide garbage disposal on main sink drain.

n. Additional specific requirements are contained in Chapter 6.

5. ELECTRICAL POWER

a. Provide electric service and distribution equipment, including metering, wiring, and electrical devices.

b. Provide for telecommunications and data wiring, fire alarms, and intrusion detection system.

c. Provide automatic emergency generator with capability to power all doors and lighting in apparatus room, bedrooms, rest rooms, day/dining rooms, and other areas based on local needs.

d. Provide special power outlets and circuits for all user-furnished equipment as required.

e. Include an auto-shutoff timer for all cooking appliances.

f. Additional specific requirement are contained in Chapter 6.

6. LIGHTING

a. General lighting should be fluorescent or LED with low temperature, energy-efficient ballasts and lamps, as applicable.

b. Provide interior and exterior lighting control systems, including ambient light dimmers and multiple switching for low ambient light levels and energy conservation.

c. Rate incandescent lighting lamps at 2,500 hours.

d. Provide high-intensity discharge (HID) lighting for the apparatus room parking apron to permit exterior servicing and maintenance of vehicles during evening hours.

e. Training room lighting should be fluorescent or LED, supplemented with incandescent accent lighting. Provide multiple switching and dimming controls for low ambient light levels and energy conservation.

f. Provide master-lighting, override controls in the Communication Center/Watch Room for the private rooms, sleeping quarters and Apparatus Bay.

g. Provide red strobe lighting on facility interior and exterior to alert fire fighters of an emergency response. Lighting should be activated by alert tones initiated from the local dispatch agency and remain activated for no more than 3 minutes.

h. At parking areas and walkways, use HID light sources controlled by combination time clock/photo cells.

i. Provide night lighting or motion censored lighting in apparatus room and corridors.

j. Provide low ambient floor lighting in sleeping room corridors.

7. FIRE PROTECTION

a. Facility should be designed for Type B (Business) occupancy, noncombustible construction with fire protection systems. Some areas will need to conform to other code provisions such as the Apparatus Room meeting Type S1 (Storage), Bunkroom meeting Type R (Residential) and some Assembly areas.

b. Provide an automatic sprinkler system throughout with smoke detectors in all sleeping areas. Smoke detector activation sounds an alarm throughout the fire station.

c. Heat detectors are hard-wired to the fire alarm system and activate the alarm throughout.

d. Provide a fire detection/suppression enunciator panel for the building in the Vestibule.

e. The enunciator panel should indicate the location of detectors that have activated.

f. Provide audible and visual fire alarm systems in personnel sleeping areas. Tones should gradually increase in volume with a strobe light.

g. Provide appropriate fire protection at food preparation facilities.

h. Provide carbon monoxide detection per MIOSHA and NFPA requirements in Bunkrooms and Apparatus Room areas.

8. DESIGN OPTIONS

A second-floor area could be considered. It is desirable to have all personnel functions located remote from administrative and operational functions. The primary consideration should be to keep the general public from fire fighter/employee personal areas.

CHAPTER 4 - INTERIOR FINISHES

A. GENERAL

Finish materials and furnishings should be selected through the use of professional interior design services. Selections should be based on anticipated use, maintenance qualities, life cycle cost, fire and other life safety requirements, as well as aesthetic qualities. Coordinate materials, finish, color, and texture selections to complement the overall building design and image. Select colors and finishes to express professionalism, warmth, and a strong, positive image. Select local materials to the greatest extent practical. Ensure that carpets and other finish materials comply with applicable criteria.

B. COLORS AND FINISHES

Use colors and finishes of surface materials to highlight and differentiate spaces. For example, the maintenance area requires extremely durable and easy-to-maintain finishes. The designer should consider environmental and climate issues when selecting a color scheme.

Permanent and semi-permanent surface materials, such as tile, carpet, and the majority of the wall coverings, should be in neutral color tones. Accent colors can be used on surfaces which can be easily changed.

Understand excellence is the standard; however, extravagant accessories must be avoided. Keep selections simple to reduce construction and maintenance requirements.

1. FLOOR COVERING - Nine flooring choices are available, depending on the finish required.

a. VINYL COMPOSITION TILE - Use in service, janitorial, and maintenance areas and other high-soil areas. Benefits are ease of maintenance and durability.

b. PORCELAIN TILE - Use in high-maintenance areas where extreme durability is required and where water and moisture are present. Can be used for both indoor and outdoor projects.

c. CERAMIC TILE - Use in areas where water and moisture are present, such as rest rooms and janitor's closets. Provides ease of maintenance and durability.

d. CARPET TILE (GENERAL PURPOSE) - For general use wherever carpet is required. It is easy to install and the overall pattern conceals stains and traffic wear. Provides easy replacement, storage and flexibility.

e. CARPET TILE (STATIC RESISTANT) - Use in telecommunications or computer rooms.

f. CARPET TILE (BORDER) - May be used as an accent in public areas, such as hallways and reception rooms, or wherever a definition of space is required.

g. BROADLOOM CARPET - Use in offices, conference rooms, and training area.

h. CONCRETE WITH EPOXY TYPE COATING – Use in the apparatus bay.

i. SEALED CONCRETE – Use in maintenance and building service areas.

2. BASE - Standard vinyl base will be used throughout most projects. It provides ease of maintenance and durability.

3. WALL COVERINGS

a. ACOUSTICAL WALL COVERING - Use AWC-1 as an overall wall covering; i.e., in telecommunications/computer room and fitness room where additional acoustical treatment is desired.

b. VINYL WALL COVERING - Two choices of covering are available:

(1) VWC- 1 - Use as an overall wall covering; i.e., in private corridors, offices, training rooms and recreation areas where an upgraded finish is desired.

(2) VWC-2 - Use as an overall wall covering; e.g., in public corridors, vending, dining areas and main reception areas where there is public traffic and more durability is required.

4. MINI BLINDS - Can be used in all areas where window treatment is required. Use one color to provide an overall uniform appearance. Blinds should be neutral.

5. PAINT - Where ease of maintenance is necessary paint is recommended.

6. OVERALL PAINT COLOR - Select one color to use on walls, columns and doors. Use semi-gloss paint at door frames, trim and areas that require frequent cleaning, i.e. kitchens, bathrooms.

7. CEILING TILE - Use 600 by 600 mm (2 x 2 ft) standard or regular system. Base standards should be established for plumbing, electrical, and mechanical fixture selections.

C. FURNITURE

1. Buil-in (casework) furniture is an integral part of the overall building design and image. Coordinate furniture selection for consistency with finish materials, textures, and colors of architectural elements.

2. Movable furnishings such as office furnishings will be coordinated with the owner prior to purchase and installation.

D. FINISH SCHEDULE

The Table below shows a finish schedule, including the floor, base, walls, and ceiling finishes that may considered in designing the Dexter City Fire Station. It is not necessary to adhere to this schedule during the design phase.

Fire station interior design should coordinate materials, finish, color, and texture selections to complement the overall building design and image. Colors and finishes should reflect professionalism, warmth, and a strong, positive image

FINISH SCHEDULE - EXAMPLE

	FUNCTIONAL AREA NAME	FLOOR	BASE	WALLS	CEILING	NOTES
1	Vestibule	PED-1	VB-1	VWC-2	ACT-1	4
1	Entrance/Reception	CPT-2	VB-2	VWC-2	ACT-1	
2	Telecommunications Room	CONC	VB-1	AWC-1	ACT-1	
3	Apparatus Room	CONC	N/A	PT-3	EXP	5
3	Hose Storage and Drying	CONC	N/A	PT-3	EXP	5
3	Fire-fighting Agent Storage	CONC	N/A	PT-3	EXP	5
4	Training Room	CPT-2	VB-1	VWC-1	ACT-1	6
4	Audiovisual Storage	CONC	VB-1	PT-1	ACT-1	
5	Training Office	CPT-2	VB-1	PT-1	ACT-1	
6	Physical Fitness	MAT-1	VB-2	AWC-1/ MR-1	ACT-1	2
7	Private Bedrooms	CPT-2	VB-1	PT-1	ACT-1	
8	Men's Rest Rooms /Showers /Locker Room	CT-1	CT-1	CT-2	PT-4	1,3
9	Women's Rest Rooms /Showers	CT-1	CT-1	CT-2	PT-4	1,3

	/Locker Room					
10	Laundry	CT-3	CT-3	PT-3	ACT-1	1
11	Day Room	CPT-2	VB-1	VWC-1	ACT-1	
11	Television Room	CPT-2	VB-1	VWC-1	ACT-1	
12	Kitchen	CT-3	CT-3	PT-3	PT-4	
12	Kitchen Storage	CT-3	CT-3	PT-1	PT-4	
12	Dining Area	CPT-2	VB-1	VWC-2	ACT-1	
12	Vending	VCT-1	VB-2	VWC-2	ACT-1	
13	Communication Center/Watch Room	CPT-1	VB-1	PT-1	ACT-1	
13	Copy Room	CPT-2	VB-1	VWC-2	ACT-1	
14	Fire Chief's Office and Conference Room	CPT-2	VB-1	VWC-1	ACT-1	
15	Assistant Chief/Admin. Office	CPT-2	VB-1	PT-1	ACT-1	
16	Fire Prevention / Plans Review Office	CPT-2	VB-1	PT-1	ACT-1	
17	Janitor's Closet	CONC	VB-2	PT-1	EXP	
18	General Supply/Medical Storage	CONC	VB-2	PT-1	EXP	
19	Protective Clothing Lockers	VCT-1	VB-2	PT-1	PT-4	
20	Flammable Storage	CONC	N/A	PT-3	EXP	
21	Vehicle Maintenance Office, Parts & Tools	CONC	N/A	PT-3	EXP	5
22	SCBA Maintenance and Repair	VCT-1	VB-2	PT-1	ACT-1	
23	Protective Clothing Laundry	CT-3	CT-3	PT-3	PT-4	1
23	Disinfecting Area	PRT-1	PRT-1	PT-3	ACT-1	1
24	Unisex Public Restroom	CT-1	CT-1	PT-3	PT-4	1
25	Mech/Elec/Tele/Comp Room	CONC	VB-2	PT-1	EXP	
26	Common Hallways	VCT-1	VB-2	PT-1	ACT-1	
27	General Storage - Mezzanine	CONC	N/A	PT-3	EXP	

FINISH SCHEDULE KEY NOTES:

1. Provide water-resistant gypsum board ceiling and walls.
2. Provide a full-length mirror on two walls and acoustical wall covering on the other walls.
3. Provide ceramic wall tile to the ceiling.
4. Exterior building materials may be introduced into the vestibule.
5. Provide wall construction of concrete masonry units.

FINISH SCHEDULE ABBREVIATIONS:

ACT-1 600 x 600 mm (2 x 2 ft.) acoustical ceiling tile
AWC-1 Acoustical wall covering
CONC Seated concrete

CPT-1 Static resistant carpet tile
CPT-2 Regular carpet tile
CT-1 Ceramic floor tile and coved base
CT-2 Ceramic wall tile
CT-3 Non-skid ceramic tile with coved base
EXP Exposed structure
MAT-1 Interlocking exercise mat
MR-1 Full-length mirror
PED-1 Recessed walk-off ped mat
PT-1 Flat latex paint
PT-3 Epoxy paint
PT-4 Ceiling white epoxy paint
VB-1 100 mm (4 in) straight vinyl base
VB-2 100 nun (4 in) covered vinyl base
VCT-1 Vinyl composition tile
VWC-1 Vinyl Wall Covering type 1
VWC-2 Vinyl Wall Covering type 2

CHAPTER 5 - GENERAL REFERENCES

The following codes or Code Agencies are for reference only and are not all inclusive to this project. It is the Architects and Engineering firm's responsibility to ensure compliance with all relevant requirements.

Michigan Building Code
Michigan occupational Safety and Health Regulation
International Fire Code
Environmental Protection Agency
NFPA, National Fire Protection Association
NFPA 13, Standard for Sprinkler Systems
NFPA 17A, Standard for Wet Chemical Extinguishing Systems
NFPA 72, Standard for Fire Protection Signaling Systems
NFPA 96, Standard for Installation of Equipment for the Removal of Smoke and Grease Laden Vapors
NFPA 101, Life Safety Code
NFPA 1500, Standard for Fire Department Occupational Safety and Health Program
NFPA 1581, Standard for Fire Department Infection Control Program

CHAPTER 6 – ROOM TITLES AND ESTIMATED SQUARE FOOTAGE

A. ESTIMATED SQUARE FOOTAGE

The following rooms and square footages are approximations only and are based on generally recognized industrial standards and local fire department operations. Final layout may alter sizes depending on configurations and clustering concepts. Final

documents may not be all inclusive of these elements; however, this section will remain the same throughout any revisions to document the starting point of this project.

Function/Room	**Sq. Ft.**
1. Vestibule/Reception	200
2. Telecommunications Room	60
3. Apparatus Room	8000
4. Training Room	1000
5. Training Office	150
6. Physical Fitness Center	1000
7. Bunkrooms (4 @ 110)	440
8. Men's Restroom/Shower/Locker Room	400
9. Women's Restroom/Shower/Locker Room	300
10. Laundry (for linen, clothing etc./No PPE)	100
11. Recreation/Day Room	600
12. Kitchen/Kitchen Storage/Dinning/Vending	400
13. Watch Office	200
14. Fire Chief's Office and Conference Room	300
15. Assistant Chief/Shared Office	150
16. Fire Prevention/Plans Review Office	250
17 Janitor Closet (2 @ 50 each)	100
18. General/Medical Storage	200
19. Protective Clothing Storage	300
20. Flammable Storage Area	50
21. Vehicle Maintenance Office / Tool Storage	400
22. SCBA Maintenance	250
23. Protective Clothing Laundry/Decontamination Area	250
24. Unisex Public Restroom	100
25. Mechanical Room	400
26. Common Hallways	400
27. Storage Mezzanine	As needed
28. Exterior Considerations	As needed
Total:	16000+

B. GENERAL CONSIDERATIONS

Telephones and Information Technology:

A telephone system that allows multiple line capability should be installed in every room. All phones should have the capability to access an intercom system throughout the facility while placing a call on hold. Provisions for a minimum of 25 telephones throughout the facility should be provided with multiple wall jacks in each room for movement of devices.

Local Area Network (LAN) equipment should be installed to facilitate multiple computers with multiple wall jacks in each room for movement of devices. CAT 5 cable will be the minimum standard throughout the facility. Consideration should be given to

establishing stand-alone server capabilities with future expansion for other municipal or agency functions to integrate.

Intercom:

An intercom system should be installed with the main controls being located in the Communication Center/Watch Room. The Communication Center/Watch Room should be able to contact any single room. Speakers should be adequate to provide clear voice messages throughout the facility with particular attention being place on the Apparatus bay while apparatus are in operation.

CCTV:

The structure should be equipped with a CCTV system that monitors the Apparatus Room, parking areas, and main entrance. All CCTV cameras should be recorded with a minimum of 5 hours play back time. Recording equipment master controls should be located in the Communication Center/Watch Room or Telecommunication Room.

Electrical:

Lighting bunkrooms and hallways should include provisions for low ambient (yellow) lights that are activated with tone alerts to facilitate quick response of fire fighters during routine sleeping hours.

Traffic control lights should be incorporated to provide activation upon tone alerts.

Backup Power Generator: Install a diesel fuel or natural gas-powered generator to facilitate station operations during commercial power outages. Generator installation and operation shall conform to NFPA requirements.

Plumbing:

Provide softened water for all administrative, restroom, and kitchen areas.

Provide plumbing for all drains from Apparatus Bay, maintenance rooms, storage rooms, and Protective Clothing Laundry to route through an Oil/Water separator.

Clusters:

A general clustering of like functions should be considered according to the Room-by-Room Space definition.

Apparatus Bays:

The projected apparatus set to be located in this facility includes one Engine, one Aerial/Ladder Truck, two Water Tenders, one Brush Truck, one Rescue Squad, one ATV and Trailer and one Utility vehicle. Additional rolling stock to be considered for interior parking include: a Fire Prevention Trailer, one HART Vehicle, one ambulance, and a sheriff patrol car. The largest apparatus is 101" wide X 31' long X 10' tall. Double-stacked bays would be utilized for parking, washing and maintenance of apparatus and equipment. Consideration will be given for double stacked bays with drive through capabilities for apparatus or extended bays in which apparatus are parked back to back. The future addition of the Aerial/Ladder Truck will require a longer bay configured to reduce the backing of the large apparatus. The entire bay area drainage must route through a fuel/oil separator.

Two methods are used to calculate adequate apparatus parking space in the Apparatus Room. The first emphasizes the apparatus size as the predominate factor. The second emphasizes code compliance and structural design elements as a matter of efficiency.

1. Apparatus Room area should allow for 6' between apparatus sides, 4' between any apparatus bumper and an overhead door and 7' between any apparatus parked back to back and 10' between the sides of apparatus and any walls. This would create an individual drive through bay that is approximately 80 ft. long and 16 ft. wide. Adding footage on each side wall (80 ft. X 10 ft.) will create wall clearances for additional equipment.

By multiplying the footprint of the largest apparatus by the number of apparatus and allowing for additional equipment to be installed, an estimated Apparatus Room floor space is 8000 sq. ft.

2. Minimum garage door width is 14' for fire truck bays, there should be 3' between each set of doors to allow for the installation of door controls, door lighting, water fill lines, etc. There should be at least 10' clearance between the Administrative wall and the first apparatus, there should also be an additional 14' of space between the last apparatus and the outside wall to allow for the installation of hose drying equipment, PPE Drying Equipment and other large items. Assuming a bay area that will park apparatus two per bay, the length of a 5-bay area will be approximately 103' from wall to wall. Parked apparatus should have a 4' clearance from the end of any apparatus to the bay door should be at least 4' (8' front and back) and at least 6' between vehicles. Planning for future apparatus size, a length of 60' is used (assuming an aerial/ladder truck would use a complete bay). Estimated bay space required is 6180 sq. ft.

Utilizing our current apparatus fleet and projecting the purchase of an Aerial Apparatus, the Apparatus Room will need space for the following apparatus in a 5-bay layout:

One Engine	Two Water Tankers	One Aerial Apparatus
One Rescue Squad	One Brush Truck	One ATV and Trailer
One Smoke House Trainer	HART Vehicle	

Based on this discussion, the City will utilize the higher number (8000 sq. ft.) for this planning document.

Vestibule/Reception Area:

The Vestibule Area should be open to the public at all times. The Reception Area should be a secure area. The Reception Area should be built with the idea that it must remain tenable and survivable during all severe weather incidents. It is desirable to have a clear view of all the designated areas from the Communication/Watch Room.

Outside areas:

Open storage area. Areas should be fenced in and aesthetically acceptable to the structure. Area should have a concrete pad capable of sustaining heavy loads of fire apparatus. At least one outside water source should be available.

Patio/Dinning area. The area should be located outside of dining area. The area should be patio bricks or concrete pad. The area should be situated so that it is not the main entrance to the fire station. Furniture should be fixed patio furniture with umbrella. Piping for natural gas to an outdoor Bar-B-Que grill should be installed. At least one outside water source should be available, garden hose type.

Provide frost-free hose bibs on all exterior walls.

Provide parking area to accommodate 25 personal vehicles that does not obstruct apparatus response lanes or building views.

Provide adequate area for apparatus to preform drivers training activities, structural firefighting drills, and exercises without imposing a danger of damage to vehicle parking areas.

C. ROOM FUNCTIONS AND SPECIFIC DESIGN CRITERIA

NOTE: The abbreviation NSR used here indicates that no user specific requirements beyond normal regulatory requirements are anticipated.

1: ROOM TITLE: VESTIBULE/RECEPTION CENTER

Functional Narrative: Main entrance for fire station. Additionally, areas should present a professional atmosphere representative of fire protection. The area will contain trophy case and wall displays reflecting fire protection activities. The area should be divided into two subsections with (1) a waiting area for visitors and (2) a receptionist station. Personnel visiting the fire station should not have access beyond the vestibule without admittance by on duty personnel. Area may also serve as work station for police agencies in the future. There should be adequate space for the display of fire prevention materials.

A. Architectural:

1. Size: 200 SF Approx.
2. Occupancy: Daily – 4
3. Proximity to Related Functions: Locate adjacent to Apparatus Bays and near the Communication Center/Watch Room.
4. Finishes:
   (a) Ceiling: NSR
   (b) Walls: Should be designed to easily hang pictures.
   (c) Floors: NSR
5. Features:
   (a) Furniture: NSR
   (b) Doors: Exterior door will be unlocked at all times. Interior door will be secured with access provided by on duty personnel.
   (c) Others: NSR
6. Furnishings: NSR
7. Spatial Definition:

(a) Ceiling Height: NSR

8. Area Identification/Signage: Reception Center

B. Structural:

1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:

1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning NSR
4. Plumbing: NSR
5. Safety: Provide a pin/cipher type electric lock or strike with a remote push button release. Also provide manual key override of the lock to gain access to the Communication Center/Watch Room or hallway.

D. Electrical:

1. Lighting: NSR
2. Power Supply: NSR
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
   (e) UPS: NSR
3. Hazardous Classification: None

E. Fire Protection:

1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:

1. Telephone: Vestibule should contain a local telephone that dials into the station.
2. Public Address (PA): None
3. Computer System: None
4. CCTV: Area should be monitored.
5. Intercom: None

G. Equipment:

1. Government Furnished (GF) Equipment: NSR
2. Contractor Furnished (CF) Equipment:
   a. Provide Two (2) guest chairs in the reception area.
   b. Provide telephone.
3. Design Considerations:

(a) Area should represent a separation from fire department administrative functions and the general public. Location should be such that visitors know where the primary entrance is located.

(b) Area could be separated into a small vestibule and reception area. If this is done, then the reception area could be combined with the administrative storage area to create a larger open area.

H. Environmental Considerations: NSR

2: ROOM TITLE: TELECOMMUNICATION ROOM

Functional Narrative: Utility room designed to provide space for computer network equipment, telephone switch and UPS system for the entire facility.

A. Architectural:

1. Size: 60 SF Approx.
2. Occupancy: Daily – 0
3. Proximity to Related Functions: Locate adjacent to Communication Center/Watch Room and Offices.
4. Finishes:
   (a) Ceiling: NSR
   (b) Walls: Wood panels for mounting racks and communication equipment.
   (c) Floors: NSR
5. Features:
   (a) Furniture: None
   (b) Doors: Lockable standard door.
   (c) Other: NSR
6. Furnishings: NSR
7. Spatial Definition: NSR
8. Area Identification/Signage: Telecommunications

B. Structural:

1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical: Provide separate environmental control equipment including air conditioning for the telecommunications/computer room.

1. Heating: NSR
2. Ventilation: Ensure adequate ventilation to keep network and communication equipment below maximum operating temperatures.
3. Air Conditioning:
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:

1. Lighting: NSR

2. Power Supply: NSR
(a) Requirements: NSR
(b) Rating: NSR
(c) Receptacles: NSR
(d) Grounding: NSR
(e) Hazardous Classification: NSR
(f) Provide Un-Interrupted Power Supply for critical fire alarm and computer systems.

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: NSR
2. Public Address (PA): NSR
3. Computer System: NSR
4. CCTV: NSR
5. Intercom: NSR

G. Equipment:
1. Government Furnished (GF) Equipment:
(a) IT Server to be installed.
2. Contractor Furnished (CF) Equipment:
(a) Provide for the telephone switch.
(b) Provide for a UPS system to support the critical electronic functions.
(c) Provide floor to ceiling painted plywood panels for installing the telecommunications cables.
(d) Provide data recording equipment to facilitate recording of two (2) telephone lines, up to 10 radio frequencies and CCTV video equipment. This may require multiple systems.
3. Design Considerations:
(a) Wire functional areas in the fire station for local area network (LAN) computers as required.
(b) Provide surge protection and clean power for all computer room equipment.
(c) Utility systems should include sufficient redundancy to allow for equipment maintenance and contingencies 24-hours a day.

H. Environmental Considerations: NSR

3. ROOM TITLE: APPARATUS ROOM

Functional Narrative: Used for parking fire protection vehicles, sometimes used to perform maintenance on the vehicles, and used for training sessions. Current vehicle fleet requires 10 drive-through bays (or 5 with apparatus parked back to back), with one

being utilized as a maintenance bay. Hose Dryer, PPE Dryer, and flammable liquid lockers may be permanently installed in the bay area near an exterior wall.

A. Architectural:

1. Size: 8000 SF Approx. Bays will be designed such that there will be no less than four (4) feet of clear space between the front of any apparatus and the overhead door. A minimum of seven (7) foot clearance will be maintained between the rears of two pieces of apparatus to leave a clear vision and travel path from one side of the station to the other. Apparatus location will be determined to maximize space. A minimum of six (6) foot of clear space will be maintained between the sides of each apparatus.

2. Occupancy: Daily – 4

3. Proximity to Related Functions: Located near Agent Storage, Hose Storage and Drying, SCBA Maintenance, Protective Clothing Lockers, Protective Clothing Laundry, Maintenance Office, General Storage Areas and the Watch Room.

4. Finishes: NSR

(a) Ceiling: May be open to the underside of roof, prefer easily maintained and cleaned surface.

(b) Walls: Paint

(c) Floors: Provide a non-skid apparatus room floor impervious to fuels, fire fighting chemicals, and various automotive lubricants. The floor surface should not be affected by the weight of the vehicle or subject to it being pulled by the tires. Do not use paint for non-skid surfaces.

5. Features:

(a) Furniture: NSR

(b) Door Sizes and Quantity:

(1) Provide 14-foot-wide heavy-duty, insulated door apparatus room doors at all locations.

(2) Equip doors with a signaling system to indicate when they are fully raised. The red and green indicators should be located on the driver's sides, mounted 6 ft. above the floor.

(3) Equip doors with automatic reverse and/or electric eye devices that activate when the door contacts an obstruction.

(4) Provide a manual means to open overhead doors in case of power failure.

(5) Do not install personnel doors in the overhead doors.

(6) Provide personnel doors as required.

(7) One bay should be separated from other bays by partial wall structure with multiple openings for personnel travel. The purpose is to limit effects of apparatus maintenance and cleaning functions from other apparatus.

6. Furnishings: NSR

7. Spatial Definition:

(a) Ceiling Height: Minimum 20 feet from floor to lowest structural member.

8. Area Identification/ Signage: Apparatus Room

B. Structural:

1. Ceiling/Roof: Limited number of internal columns should be used to support the roof structure.

2. Walls: Paint
3. Floors: Stressed for heavy vehicles (59000 lbs.)

C. Mechanical:

1. Heating: Forced air heating system with ceiling fans throughout. In-floor heating will be considered as an alternative.
2. Ventilation: Provide for overhead or under floor ventilation of vehicle exhaust from apparatus room.
3. Air Conditioning: NSR
4. Plumbing:
   (a) Provide an emergency eye wash fountain and shower.
   (b) Provide a foot-operated mop sink.
   (c) Provide an indoor mop hanging rack.
   (d) Provide minimum 3 in. diameter water service with 2.5 in. diameter National Standard Threads ball valve outlet to each vehicle. Connections should be at ground level.
   (e) Provide a minimum of one standard hot and cold-water garden hose bib for every two vehicle bays. Provide heavy duty hose reels at each location.
   (f) Provide a trench drain for all but the maintenance bay which should be a circular drain cover. All apparatus drains should have a fine grate cover and be connected to an approved oil/water separator prior to interconnection to the sanitary sewer.
   (g) Floors should be sloped to the trench drains.
   (h) Provide low-pressure compressed air system on self-retracting lines at each vehicle space for servicing vehicle tires, brakes and operating air tools.

D. Electrical:

1. Lighting: Provide instant-start fluorescent lighting in the apparatus room.
2. Power Supply:
   (a) Requirements:
      (1) Locate electrical outlets 36 in. above the floor.
      (2) Provide self-retracting electric drop cords between vehicle spaces for drop light and apparatus Kuasmal Systems.
      (3) Provide 110/220 outlets throughout.
   (b) Rating: NSR
   (c) Receptacles:
      (1) Provide one electrical outlet in Vehicle Maintenance Bay capable of supporting welding equipment requirements.
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:

1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:

1. Telephone: Provide two remote multi-line telephone jacks on apparatus room.
2. Public Address: Speakers only.
3. Computer System: NA
4. CCTV: Camera recording of bay doors both front and rear.
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment:
   (a) Relocate and install Breathing Air Compressor and Cascade System.
2. Contractor Furnished (CF) Equipment:
   (a) Vehicle Exhaust Removal System.
   (b) Ceiling fans for heat distribution as necessary.
   (c) Provide Hose Dryer
   (d) Provide Personal Protective Equipment Dryer
3. Design Considerations: NSR

H. Environmental Considerations: NSR

4. ROOM TITLE: TRAINING ROOM

Functional Narrative: Provides space for ongoing training in firefighting issues and techniques. This space may also be used for providing fire prevention training and briefings. Must be large enough to accommodate the DAFD full staff and Mutual Aid Department's personnel on occasion.

A. Architectural:
1. Size: 1000 SF Approx.
2. Occupancy: Daily – 4 Training Sessions – Up to 50.
3. Proximity to Related Functions: Locate near the Training Office. Locate away from bunkroom area.
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint, consider write on paint in lieu of marker boards.
   (c) Floors: Carpet
5. Features:
   (a) Furniture: Tables, Chairs, Audio Visual Carts, Book Shelving
   (b) Door Sizes and Quantity: NSR
6. Furnishings:
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Classroom

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: Provide walls with a minimum STC rating of 45.
3. Floors: Carpet

C. Mechanical:

1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:

1. Lighting: Provide fluorescent or LED lighting. Supplement with incandescent accent lighting. Provide multiple switching and dimming controls for low ambient light levels and energy conservation.
2. Power Supply:
   (a) Requirements:
      (1) Provide for overhead, slide, and video projection.
      (2) Provide electrical and data outlet for computer systems.
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:

1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:

1. Telephone: Provide multi-line telephone jacks.
2. Public Address: Speakers with volume control.
3. Computer System: Provide access to LAN system for 4 computers remotely located.
4. CCTV: Provide antenna, satellite and CCTV connections.
5. Intercom: Stand alone or integrated into the telephone system.

G. Equipment:

1. Government Furnished (GF) Equipment.
   (a) Computers and audio-visual equipment.
2. Contractor Furnished (CF) Equipment:
   (a) Provide Dry erase boards and bulletin boards.
   (b) Overhead projection equipment interfaced into computer system and television equipment.
   (c) Provide television equipment.
   (d) Provide classroom seating and tables for up to 50 individuals.
   (e) Provide free standing speaking lectern.
   (f) Provide instructor table.
   (g) Provide multi line telephone and intercom equipment.
   (h) Provide "smartboard" training equipment or equivalent.
3. Design Considerations:

(a) Provide storage areas for training equipment and materials
(b) Provide built-in audio-visual control area and projection surface on one wall.
(c) Provide adjustable shelving units along one wall.
(d) Provide counter space for equipment with cabinets below for storage
(e) Provide overhead storage space for light administrative materials.
(f) Provide open shelving for fire prevention educational material

H. Environmental Considerations: NSR

5. ROOM TITLE: TRAINING OFFICE

Functional Narrative: Provides space for Training Officer to perform required functions and secure controlled training material.

A. Architectural:
1. Size: 150 SF Approx.
2. Occupancy: Daily – 1
3. Proximity to Related Functions: Locate near Classroom.
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint
   (c) Floors: Carpet
5. Features:
   (a) Furniture: General Office Furniture
   (b) Door Sizes and Quantity: NSR
6. Furnishings:
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Training Office

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: Provide walls with a minimum STC rating of 45.
3. Floors: Carpet

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting.
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR

(c) Receptacles: NSR
(d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: Provide multi-line telephone jacks.
2. Public Address: Speakers with volume control.
3. Computer System: Provide access to LAN system.
4. CCTV: Provide antenna, satellite and CCTV connections.
5. Intercom: Stand alone or integrated into telephone system.

G. Equipment:
1. Government Furnished (GF) Equipment:
(a) None
2. Contractor Furnished (CF) Equipment:
(a) Provide double pedestal desk.
(b) Provide two (2) standard letter size file cabinets.
(c) Provide one (1) work chair.
(d) Provide two (2) visitor seating chairs.
(e) Provide one (1) ceiling mounted television with DVD play and record capabilities.
(f) Provide multi line telephone and intercom equipment.
3. Design Considerations:
(a) Provide lockable door.
(b) Provide lockable storage space.

H. Environmental Considerations: NSR

6. ROOM TITLE: PHYSICAL FITNESS CENTER

Functional Narrative: Provides space for personnel to complete daily physical fitness training activities. Equipment includes treadmill, stair stepping machine, free weights and weight machines. Area may be used by Dexter City employees on occasion.

A. Architectural:
1. Size: 1000 SF Approx.
2. Occupancy: Daily – 4
3. Proximity to Related Functions: Locker rooms or shower areas.
4. Finishes: NSR
(a) Ceiling: NSR
(b) Walls: Paint
(c) Floors: Rubberized to accommodate physical fitness equipment
5. Features:

(a) Furniture: NSR

(b) Door Sizes and Quantity: Provide one large exterior door for movement of heavy equipment.

6. Furnishings: Room will contain various exercise equipment.

7. Spatial Definition:

(a) Ceiling Height: Must be adequate for personnel using treadmills and stair stepper equipment. Must be adequate for multi-station exercise equipment.

(b) Doors: Provide exterior double door or interior double door to extra wide hallway to facilitate installation of large exercise equipment.

8. Area Identification/ Signage: Physical Fitness Center

B. Structural:

1. Ceiling/Roof: NSR
2. Walls: Provide walls with a minimum STC rating of 45.
3. Floors: NSR

C. Mechanical:

1. Heating: NSR
2. Ventilation: Provide ceiling fans and/or external vent fans.
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:

1. Lighting: NSR
2. Power Supply:
   (a) Requirements: Provide appropriate electrical outlets for exercise equipment.
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:

1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:

1. Telephone: Provide multi-line telephone jacks.
2. Public Address: Speakers only.
3. Computer System: Provide access to LAN system for 1 computer remotely located.
4. CCTV: Provide ceiling mounted television with CCTV and antenna operation.
5. Intercom: Stand alone or integrated into the telephone system.

G. Equipment:

1. Government Furnished (GF) Equipment:
   (a) None

2. Contractor Furnished (CF) Equipment:

(a) Install floor consisting of interlocking cushion mats suitable for use with free weights.

(b) Provide a rehabilitation grade treadmill.

(c) Provide a Stair Step Machine.

(d) Provide Strength Conditioning Machine.

3. Design Considerations:

(a) Provide full height and width mirror along one wall of room.

(b) Provide for storage of exercise mats.

(c) Design for Multi-Station exercise set, free weights, exercise mats, tread mills, stair stepper machines, stationary bikes and rowing machines.

(d) Provide strobe lighting that is activated with station tone alert.

H. Environmental Considerations: NSR

7. ROOM TITLE: BUNKROOMS (4)

Functional Narrative: Provides sleeping areas for fire fighters. Four individual bunkrooms will be utilized by fire protection personnel working twenty-four-hour shifts. Individual rooms should be at least 110 sq. ft. for a total 440 sq. ft. Rooms will be shared by individuals working on opposite shifts.

Space should include separate locker space for 3 individuals in each room. Adequate space should be provided for linen storage in each room.

Two bunkrooms will be used for light storage until they are needed for sleeping areas. This will occur when additional full-time staff is added or during times where a temporary increase in staffing is necessary. Adequate space should be provided for linen storage in each room. Locker space in close proximity to the bunkroom should be provided for up to 25 individuals.

A. Architectural:

1. Size: 110 SF each X 4 for a total of 440 SF Approx.

2. Occupancy: Daily – 1

3. Proximity to Related Functions: Restroom and locker room facilities. Provide a direct route to the apparatus room.

4. Finishes: NSR

(a) Ceiling: NSR

(b) Walls: Paint

(c) Floors: Carpet

5. Features:

(a) Furniture: NSR

(b) Door Sizes and Quantity: Provide doors with interior dead bolt lock only.

6. Furnishings: Bed and night table.

7. Spatial Definition:

(a) Ceiling Height: NSR

8. Area Identification/ Signage: Bunkroom No. 1 - 4

B. Structural:

1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical: Provide separate controls for HVAC in each room.
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: Provide carbon monoxide detection in each room. Alarm should be heard in bunkroom and Watch Room.

D. Electrical:
1. Lighting: Provide capability for Communication Center/Watch Room to turn on all or individual lights. Lights should be turned on with audible response tones initiated by the Tone Alert System for the Dexter Area Fire Department. Emergency lighting should be yellow with a time delay for shut off.
2. Power Supply:
(a) Requirements: NSR
(b) Rating: NSR
(c) Receptacles: NSR
(d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: Provide telephone jack with multi-line capability in each room.
2. Public Address: Speakers only.
3. Computer System: Provide LAN access to each room.
4. CCTV: NSR
5. Intercom: Stand alone or integrated into the telephone system.
6. Alarms: Provide visual and audible alarms in each bedroom, controlled from the Communication/Watch Room.

G. Equipment:
1. Government Furnished (GF) Equipment:
(a) None or as coordinated at time of installation.
2. Contractor Furnished (CF) Equipment:
(a) Bed with under-bed storage area for linen.
(b) Night stand in each room.
(c) Provide three built in lockable closet areas for individual storage of personal items such as clothing and valuables.
(d) Provide built in desk/counter area for study space.

(e) Provide one (1) work chair (total of 4) for each room.
(f) Provide multi line telephones in each room.

3. Design Considerations:
(a) Access to restrooms should be via a private corridor.
(b) Locate bunkrooms away from recreational/dining areas and maintenance, repair, storage and support areas.
(c) Consider space for television, work surface for administrative or personal activities that includes area lighting.

H. Environmental Considerations: NSR

8. ROOM TITLE: MENS RESTROOM/SHOWER/LOCKER ROOM
Functional Narrative: Restroom and shower room for up to 2 people. Should include personal locker space and adequate facilities for two showers.

A. Architectural:
1. Size: 400 SF Approx.
2. Occupancy: Daily – 2
3. Proximity to Related Functions: Locate adjacent to Bunkrooms.
4. Finishes: NSR
(a) Ceiling: NSR
(b) Walls: Paint or tile
(c) Floors: Tile
5. Features:
(a) Furniture: Provide under-sink cabinetry for storage of cleaning supplies.
(b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
(a) Ceiling Height: NSR
8. Area Identification/ Signage: Male Restroom/Locker Room

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: Provide two shower stalls.
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting system.
2. Power Supply:

(a) Requirements: NSR
(b) Rating: NSR
(c) Receptacles: NSR
(d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: None
2. Public Address: Speakers only.
3. Computer System: None
4. CCTV: None
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment:
(a) None
2. Contractor Furnished (CF) Equipment:
(a) Provide heavy-duty hardwood benches.
(b) Provide floor matting for shower areas.
(c) Provide shower curtains as necessary.
(d) Provide shower wall hooks.
(e) Provide twenty-five (25) personal lockers with shelving and cloth hooks.
3. Design Considerations:

H. Environmental Considerations: NSR

9. ROOM TITLE: WOMENS RESTROOM/SHOWER/LOCKER ROOM
Functional Narrative: Restroom and shower room for up to 2 people. Should include locker space and adequate facilities for two showers stalls.

A. Architectural:
1. Size: 300 SF Approx.
2. Occupancy: Daily – 2
3. Proximity to Related Functions: Locate adjacent to Bunkrooms.
4. Finishes: NSR
(a) Ceiling: NSR
(b) Walls: Paint or tile
(c) Floors: Tile
5. Features:
(a) Furniture: Provide under sink cabinetry for storage of cleaning supplies.
(b) Door Sizes and Quantity: NSR
6. Furnishings: NSR

7. Spatial Definition:
    (a) Ceiling Height: NSR
8. Area Identification/ Signage: Female Restroom/Locker Room

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: Provide two shower stalls.
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting system.
2. Power Supply:
    (a) Requirements: NSR
    (b) Rating: NSR
    (c) Receptacles: NSR
    (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: None
2. Public Address: Speaker only.
3. Computer System: None
4. CCTV: None
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment:
    (a) None
2. Contractor Furnished (CF) Equipment:
    (a) Provide heavy-duty hardwood benches.
    (b) Provide floor matting for shower areas.
    (c) Provide shower curtains as necessary.
    (d) Provide shower wall hooks.
3. Design Considerations:

H. Environmental Considerations: NSR

10. ROOM TITLE: LAUNDRY ROOM

Functional Narrative: Laundry room for personal laundry, station linen and other departmental non-hazardous, non-bunker cleaning purposes.

A. Architectural:
1. Size: 100 SF Approx.
2. Occupancy: Daily – 2
3. Proximity to Related Functions:
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint
   (c) Floors: Tile or sealed concrete
5. Features:
   (a) Furniture: Provide counter area for laundry folding.
   (b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Laundry

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: Provide floor drains
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting system.
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: NSR
2. Public Address: Speaker only.
3. Computer System: None
4. CCTV: None
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment:
   (a) None
2. Contractor Furnished (CF) Equipment:
   (a) Provide commercial heavy-duty washer and dryer.
3. Design Considerations:
   (a) Provide storage area for cleaning supplies.
   (b) Provide storage area for station linen.

H. Environmental Considerations: NSR

11. ROOM TITLE: DAY ROOM

Functional Narrative: Area for television viewing and relaxation after normal duty hours. This area may occasionally be used for training purposes.

A. Architectural:
1. Size: 600 SF Approx.
2. Occupancy: Daily – 2
3. Proximity to Related Functions: Locate adjacent to Dining room and Kitchen areas.
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: NSR
   (c) Floors: Carpet
5. Features:
   (a) Furniture: Wide Screen Television and multiple reclining chairs
   (b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Day Room

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR

2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:
1. Lighting:
(a) Provide day lighting control
(b) Provide energy efficient lighting with dimming system.
2. Power Supply:
(a) Requirements: NSR
(b) Rating: NSR
(c) Receptacles: NSR
(d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: Provide jacks for multi-line telephones.
2. Public Address: Speaker with volume control.
3. Computer System: NSR
4. CCTV: Provide connections for antenna, satellite and CCTV Viewing.
5. Intercom: Stand alone or integrated into the telephone system.

G. Equipment:
1. Government Furnished (GF) Equipment:
(a) None
2. Contractor Furnished (CF) Equipment:
(a) Provide wide screen-Flat screen television mounted on wall.
(b) Provide six (6) heavy duty commercial recliners.
(c) Provide four (4) floor lamps
(d) Provide three (3) end tables
(e) Provide multi line telephone equipment.
3. Design Considerations: NSR

H. Environmental Considerations: NSR

12. ROOM TITLE: KITCHEN, KITCHEN STORAGE, DINNING, AND VENDING
Functional Narrative: Area equipped with light commercial equipment for use by fire fighters to prepare individual and shift meals. Area will include at least two (2) dining tables with 4 chairs each.

A. Architectural:

1. Size: 400 SF Approx.
2. Occupancy: Daily – 4
3. Proximity to Related Functions:
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint
   (c) Floors: Tile, commercial/restaurant grade quarry tile.
5. Features:
   (a) Furniture: None
   (b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Kitchen/Dining Area

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:
1. Lighting: NSR
2. Power Supply:
   (a) Requirements: Provide emergency shut offs to power and gas equipment that is tripped upon emergency response tone activation.
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: Provide jacks for multi-line telephones.
2. Public Address: Speakers only.
3. Computer System: None
4. CCTV: None

5. Intercom: Stand alone or integrated into the telephone system.

G. Equipment:

1. Government Furnished (GF) Equipment:
   (a) None
2. Contractor Furnished (CF) Equipment:
   (a) Provide built-in four burner commercial stove with oven.
   (b) Provide deep double-sink with garbage disposal.
   (c) Provide heavy-duty commercial dishwasher.
   (d) Provide ice machine.
   (e) Provide a commercial refrigerator with freezer.
   (f) Install one commercial microwave oven mounted on shelves not on counter-tops.
   (g) Provide dining room tables and chairs for up to eight individuals.
3. Design Considerations:
   (a) Plumbing fixtures to be stainless steel.
   (b) Provide range hoods, air ventilation and fire suppression as required by applicable building codes.
   (c) Provide adequate cupboard and counter space for meal preparation.
   (d) At least one wall of the kitchen should have full counter top and be open to the dining room.

H. Environmental Considerations: NSR

<u>13. ROOM TITLE: COMMUNICATION CENTER/WATCH OFFICE</u>

Functional Narrative: Main officer work area used for alarm reception, report processing and general administrative functions by personnel who do not have assigned office area. This area contains the user interphase for all radio, computer and alerting equipment. It is the "nerve" center of the facility. This area will also include general administrative storage, literature storage, fax, and copy equipment.

A. Architectural:

1. Size: 200 SF Approx.
2. Occupancy: Daily – 4
3. Proximity to Related Functions:
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint
   (c) Floors: Carpet or tile.
5. Features:
   (a) Furniture: Provide for record storage, book, and binder storage
   (b) Doors: Interior door will be secured with access provided by on duty personnel.
   (c) Others:
      (1) Provide unobstructed view of the front doors of the apparatus bay.

(2) Provide closed circuit video camera system to monitor main entrance and apparatus bay.

(3) Provide design to restrict outside noise levels.

(4) Provide half wall with glass to ceiling for security of receptionist and access limiting purposes. Glass should be talk through design.

(5) Provide a small storage area within Communication/Watch Room for administrative supplies.

(6) If located on an exterior wall, provide glass that will ensure survivability.

B. Structural: Should be designed for maximum survivability and operability during natural disasters and all contingency threat conditions.

1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:

1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: Provide a pin/cipher type electric lock or strike with a remote push button release. Also provide manual key override of the lock to gain access to the Watch Room in an emergency.

D. Electrical:

1. Lighting: Provide motion sensing lighting system.
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3.) Hazardous Classification: NSR

E. Fire Protection:

1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:

1. Telephone:
   (a) Provide a telephone line for FAX Machine.
   (b) Provide direct telephone line to Huron Valley Dispatch.
2. Public Address (PA):

(a) Provide PA system with paging functions throughout the station and selectable individual rooms. Speakers should be installed in every room. Speakers should have individual volume controls with minimum settings established. Speakers should be able to be turned off.

3. Computer System: Provide LAN access for at least two desktop computer systems.
4. CCTV: Provide closed circuit video camera system to monitor main entrance, apparatus bay and flight line area. Provide outside camera with 360-degree rotation and zoom capability.
5. Intercom:
6. Radio:
(a) Install radio antenna tower and applicable conduit for wiring.

G. Equipment:
1. Government Furnished (GF) Equipment:
(a) Install Dispatch Equipment.
(b) Install Weather Monitor Equipment.
2. Contractor Furnished (CF) Equipment:
(a) Install tinted windows with blinds in office if necessary.
(b) Provide switches to the apparatus room overhead doors, opening the doors, not closing them.
(c) Provide for a lighted, wall-mounted Dexter Area Fire Department Response Area grid map.
(d) Provide a map rack system for other utility maps.
(e) Provide for task lighting at consoles.
(f) Provide two (2) work chairs.
(g) Provide 2 multi-line telephone sets.
3. Design Considerations:
(a) Provide 30 individual mail boxes approximately 8"X4"X12 deep.

H. Environmental Considerations: NSR

14. ROOM TITLE: FIRE CHIEF OFFICE AND CONFERENCE ROOM
Functional Narrative: Fire Chief administrative office. Space should be provided to conduct staff meetings and greet visitors.

A. Architectural:
1. Size: 300 SF Approx.
2. Occupancy: Daily – 1
3. Proximity to Related Functions: Locate adjacent to the Assistant Fire Chief Office.
4. Finishes: NSR
(a) Ceiling: NSR
(b) Walls: Provide minimum STC rating of 35 in the walls.
(c) Floors: Carpet
5. Features:
(a) Furniture: Desk, Chair, credenza, bookcase, and guest chairs. Television, DVD and Radios
(b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
(a) Ceiling Height: NSR

8. Area Identification/ Signage: Fire Chief Office

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting system.
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: Provide jacks for multi-line telephones.
2. Public Address: Speakers with volume control.
3. Computer System: Provide LAN access.
4. CCTV: Provide connections for antenna, satellite, and CCTV Viewing.
5. Intercom: Stand alone or integrated into the telephone system.

G. Equipment:
1. Government Furnished (GF) Equipment:
   (a) Computer Equipment, etc.
2. Contractor Furnished (CF) Equipment:
   (a) Provide ceiling mount for up to 25-inch television with DVD.
   (b) Provide one (1) double pedestal desk with file drawer.
   (c) Provide one (1) work chair.
   (d) Provide four (4) letter-sized lockable four drawer file cabinets.
   (e) Provide book shelving.
   (f) Provide multi line telephone equipment.
   (g) Provide conference table with seating for up to 5 individuals.
3. Design Considerations:

(a) Provide lockable door.
(b) Provide built in closet space with clothes hanger and shelving.

H. Environmental Considerations: NSR

15. ROOM TITLE: ASSISTANT FIRE CHIEF OFFICE/SHARED OFFICE
Functional Narrative: Private office for Assistant Fire Chiefs to work and conduct meetings.

A. Architectural:
1. Size: 150 SF Approx.
2. Occupancy: Daily – 1
3. Proximity to Related Functions: Locate adjacent to Fire Chief Office and Vestibule.
4. Finishes: NSR
(a) Ceiling: NSR
(b) Walls: Provide a minimum STC rating of 35 in walls.
(c) Floors: Carpet
5. Features:
(a) Furniture: Desk and chair, bookshelf, file cabinets, television, and DVD equipment
(b) Door Sizes and Quantity: Provide lockable door.
6. Furnishings: NSR
7. Spatial Definition:
(a) Ceiling Height: NSR
8. Area Identification/ Signage: Assistant Chief Office

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting system.
2. Power Supply:
(a) Requirements: NSR
(b) Rating: NSR
(c) Receptacles: NSR
(d) Grounding: NSR

3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: Provide jacks for multi-line telephones.
2. Public Address: Speakers with volume control
3. Computer System: Provide LAN connections for two computers.
4. CCTV: Provide connections for antenna, satellite, and CCTV viewing.
5. Intercom: Stand alone or integrated into telephone system.

G. Equipment:
1. Government Furnished (GF) Equipment:
   (a) Computer equipment.
2. Contractor Furnished (CF) Equipment:
   (a) Provide one (1) double pedestal desk with file drawer.
   (b) Provide one (1) work chair.
   (c) Provide two (2) letter-sized lockable four drawer file cabinets.
   (d) Provide book shelving.
   (e) Provide multi line telephone.
   (f) Provide two (2) chairs for visitor seating.
3. Design Considerations:
   (a) Provide a lockable door.

H. Environmental Considerations: NSR

<u>16. ROOM TITLE: FIRE PREVENTION/PLANS REVIEW OFFICE</u>
Functional Narrative: Office for one individual to conduct business, maintain records and files and complete research. Space should be provided for a small library, files, and building floor plans.

A. Architectural:
1. Size: 250 SF Approx.
2. Occupancy: Daily – 1
3. Proximity to Related Functions: Locate adjacent to Watch Room.
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Provide minimum STC rating of 35 in the walls.
   (c) Floors: Carpet
5. Features:
   (a) Furniture: Desk, Chair, credenza, bookcase and guest chairs.
   (b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:

(a) Ceiling Height: NSR

8. Area Identification/ Signage: Fire Prevention Office

B. Structural:

1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:

1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:

1. Lighting: Provide motion sensing lighting system.
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:

1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:

1. Telephone: Provide two jacks for multi-line telephones.
2. Public Address: Speaker with volume control.
3. Computer System: Provide LAN access for two computer stations.
4. CCTV: Provide connections for antenna, satellite and CCTV viewing.
5. Intercom: Stand alone or integrated into the telephone system.

G. Equipment:

1. Government Furnished (GF) Equipment:
   (a) Computer Equipment.
2. Contractor Furnished (CF) Equipment:
   (a) Provide one (1) double pedestal desk with file drawer.
   (b) Provide one (1) work chair.
   (c) Provide two (2) letter-sized lockable four drawer file cabinets.
   (d) Provide book shelving.
   (e) Provide multi line telephone equipment.
   (f) Provide two (2) chairs for visitor seating.
3. Design Considerations:

(a) Provide a lockable door.

H. Environmental Considerations: NSR

17. ROOM TITLE: JANITOR CLOSET

Functional Narrative: Used to store equipment for daily use in cleaning the fire station. Should have one closet in Administrative areas and one located on Apparatus Room.

A. Architectural:
1. Size: 50 SF Approx.
2. Occupancy: Daily – 0
3. Proximity to Related Functions:
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint
   (c) Floors: Concrete
5. Features:
   (a) Furniture: NSR
   (b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Janitor Closet

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: Provide floor drains
5. Safety: NSR

D. Electrical:
1. Lighting: NSR
2. Power Supply:
   (a) Requirements: Ground faulted room.
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:

1. Detection: Per NFPA Requirements
2. Suppression: Per NFPA Requirements

F. Communications:
1. Telephone: None
2. Public Address: None
3. Computer System: None
4. CCTV: None
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment: General Cleaning Equipment
2. Contractor Furnished (CF) Equipment: As necessary per design.
3. Design Considerations: NSR

H. Environmental Considerations: NSR

18. ROOM TITLE: GENERAL / MEDICAL STORAGE

Functional Narrative: Storage area for administrative supplies, medical supplies, training equipment, and excess equipment.

A. Architectural:
1. Size: 200 SF Approx.
2. Occupancy: Daily – 0
3. Proximity to Related Functions:
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: NSR
   (c) Floors: NSR
5. Features:
   (a) Furniture: NSR
   (b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Administrative/Medical Storage

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR

4. Plumbing: NSR
5. Safety: NSR

D. Electrical:
1. Lighting: NSR
2. Power Supply:
(a) Requirements: NSR
(b) Rating: NSR
(c) Receptacles: NSR
(d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: None
2. Public Address: None
3. Computer System: None
4. CCTV: None
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment:
2. Contractor Furnished (CF) Equipment:
(a) Provide four (4) stainless steel rolling storage racks, 48" by 5 shelves.
(b) Provide four (4) double door 48" storage cabinets.
3. Design Considerations: NSR

H. Environmental Considerations: NSR

19. ROOM TITLE: PROTECTIVE CLOTHING STORAGE AREA
Functional Narrative: Area for fire fighters to store firefighting gear when not in use. Lockers for thirty-five (35) individuals are required.

A. Architectural:
1. Size: 300 SF Approx.
2. Occupancy: Daily – 35
3. Proximity to Related Functions: Locate adjacent to Apparatus room and Protective Clothing Laundry.
4. Finishes: NSR
(a) Ceiling: NSR
(b) Walls: Paint
(c) Floors: NSR
5. Features:

(a) Furniture: NSR

(b) Door Sizes and Quantity: Exterior door for quick access by responding personnel. Exterior single door, internal double door to apparatus bay.

6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Bunker Storage

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: Provide negative pressure ventilation to prevent fumes from bunker clothing from entering other areas.
3. Air Conditioning: NSR
4. Plumbing: Provide floor drains.
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting and tie to emergency dispatch lighting system.
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: None
2. Public Address: Speaker only.
3. Computer System: None
4. CCTV: None
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment:
   (a) None
2. Contractor Furnished (CF) Equipment:

(a) Provide thirty-five (35) wire mesh cubicles with shelves and clothes hooks. Cubicles should have adequate air circulation to allow for air drying of equipment.

3. Design Considerations: NSR

H. Environmental Considerations: NSR

20. ROOM TITLE: FLAMMABLE STORAGE

Functional Narrative: Area used to store small quantities flammable and combustible liquids for apparatus and equipment maintenance.

A. Architectural:

1. Size: 100 SF Approx.
2. Occupancy: Daily – 0
3. Proximity to Related Functions: Locate adjacent to Apparatus room.
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint
   (c) Floors: Sealed Concrete
5. Features:
   (a) Furniture: NSR
   (b) Door Sizes and Quantity: Interior door should be a double hung door providing a wide opening for large equipment.
6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Flammable Storage

B. Structural:

1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:

1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: Provide valved floor drains. Room should be diked for inadvertent spillage of materials.
5. Safety: NSR

D. Electrical:

1. Lighting: NSR
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR

(d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements
2. Suppression: Per NFPA Requirements

F. Communications:
1. Telephone: None
2. Public Address: None
3. Computer System: None
4. CCTV: None
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment: None
2. Contractor Furnished (CF) Equipment:
(a) Provide built-in racks for small container storage.
3. Design Considerations: NSR

H. Environmental Considerations: NSR

21. ROOM TITLE: VEHICLE MAINTENANCE/TOOL STORAGE
Functional Narrative: Area provides open work area, tool and parts storage for the maintenance of fire department equipment and apparatus.

A. Architectural:
1. Size: 400 SF Approx.
2. Occupancy: Daily – 1
3. Proximity to Related Functions: Locate near main storage area and apparatus room.
4. Finishes: NSR
(a) Ceiling: NSR
(b) Walls: NSR
(c) Floors: Concrete
5. Features:
(a) Furniture:
(b) Door Sizes and Quantity: At least one exterior double wide door to facilitate delivery of equipment and materials such 55 gallon liquid drums.
6. Furnishings: NSR
7. Spatial Definition:
(a) Ceiling Height: NSR
8. Area Identification/ Signage: Vehicle Maintenance

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR

3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:
1. Lighting: NSR
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: Provide jacks for multi-line telephones.
2. Public Address: Speaker with volume control.
3. Computer System: Provide LAN access.
4. CCTV: None
5. Intercom: Stand-alone system or integrated into the telephone system.

G. Equipment:
1. Government Furnished (GF) Equipment:
   (a) Current DAFD equipment will be utilized.
2. Contractor Furnished (CF) Equipment:
   (a) Appropriate metal shelving for the weight of automotive spare parts and tools.
   (b) Work benches or surfaces for maintenance and repair of equipment.
   (c) Provide multi line telephone equipment.
   (d) Provide two (2) work stools.
   (e) Provide adequate rubberized floor matting for work bench areas.
3. Design Considerations: NSR

H. Environmental Considerations: NSR

<u>22. ROOM TITLE: SCBA MAINTENANCE</u>
Functional Narrative: Used to provide maintenance, repair, and testing of Self Contained Breathing Apparatus. Area will contain stationary cascade refill system. This area should be near an exterior wall with an exterior entrance. Additionally, this room will be

occupied by one individual and will be used to track and store SCBA and personnel records in connection with the respiratory protection program.

Area should include small administrative area for records maintenance for all department equipment and apparatus.

A. Architectural:

1. Size: 250 SF Approx.
2. Occupancy: Daily – 1
3. Proximity to Related Functions: Locate adjacent to Apparatus room and an exterior wall. Room will need ducting for outside air to refill SCBA bottles.
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint
   (c) Floors: Concrete
5. Features:
   (a) Furniture: NSR
   (b) Door Sizes and Quantity: At least one door should lead directly outside. Interior door should be a double hung door providing a wide opening for large equipment.
6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: SCBA Maintenance

B. Structural:

1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:

1. Heating: NSR
2. Ventilation: Requires clean air intake for breathing air compressor.
3. Air Conditioning: NSR
4. Plumbing: Provide hot and cold water, floor drains and compressed air to this room.
5. Safety: NSR

D. Electrical:

1. Lighting: Provide motion sensing lighting system.
2. Power Supply:
   (a) Requirements: At least one 220V circuit for Breathing Air Compressor.
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: Provide telephone jacks with multi-line capability.
2. Public Address: Speaker only.
3. Computer System: Provide LAN access for one workstation.
4. CCTV: None
5. Intercom: Stand-alone system or integrated into the telephone system.

G. Equipment:
1. Government Furnished (GF) Equipment: None
2. Contractor Furnished (CF) Equipment:
(a) Provide one (1) single pedestal desk with file drawer.
(b) Provide built-in book shelving.
(c) Provide two (2) work stools.
(d) Provide adequate rubberized floor matting for work bench areas.
(e) Provide multi-line telephone equipment.
(g) Provide SCBA bottle storage racks.
3. Design Considerations:
(a) This room should be a "clean" area for repairing respirators.

H. Environmental Considerations: Must be "clean" area for servicing breathing equipment.

23. ROOM TITLE: PROTECTIVE CLOTHING LAUNDRY/DECON AREA
Functional Narrative: Area used for cleaning of contaminated protective clothing and personnel. Personnel returning from incidents that result in large amounts of contamination products should be able to enter this room without entering other areas of the fire station and put contaminated clothing directly into cleaning machines. A small hands-free shower area should be installed for gross decontamination of protective equipment.

A. Architectural:
1. Size: 250 SF Approx.
2. Occupancy: Daily – 0
3. Proximity to Related Functions: Locate adjacent to Apparatus room and Protective Clothing Storage area.
4. Finishes: NSR
(a) Ceiling: NSR
(b) Walls: Paint
(c) Floors: Concrete
5. Features:
(a) Furniture: NSR

(b) Door Sizes and Quantity: Provide access to apparatus room or exterior of building to prevent contaminated garments from entering facility.

6. Furnishings: Gear Extractor
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Decontamination Area

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: Provide negative pressure for gasses emitted with protective equipment is cleaned.
3. Air Conditioning: NSR
4. Plumbing:
   (a) Provide floor drains, slop sink and hands-free shower area.
   (b) Provide hot and cold water with spray nozzle for gross cleaning of equipment.
   (c) Provide an oil/water separator for wastewater from washers, sinks, and floor drains.
   (d) Provide compressed air hose.
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting system.
2. Power Supply:
   (a) Requirements: Provide necessary connections for Gear Extractor.
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: Provide telephone jack with multi-line capability.
2. Public Address: Speaker only.
3. Computer System: None
4. CCTV: None
5. Intercom: None

G. Equipment:

1. Government Furnished (GF) Equipment: None
2. Contractor Furnished (CF) Equipment:
   (a) Provide stainless steel sink and drip-dry rack.
   (b) Provide stainless steel drying rack for equipment that cannot be heat dried.
   (c) NFPA approved washer for cleaning biological and environmental hazards from protective clothing.
   (d) Provide a 4 ft. stainless steel worktable to test protective clothing.
3. Design Considerations:

H. Environmental Considerations: Possible hazardous materials and/or biological agents being in this room.

24. ROOM TITLE: UNISEX PUBLIC RESTROOM

Functional Narrative: Public Restroom for use by administrative staff, general public that visits, and personnel attending training sessions.

A. Architectural:
1. Size: 100 SF Approx.
2. Occupancy: Daily – 4
3. Proximity to Related Functions: Locate near Training Room and Offices
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint or tile
   (c) Floors: Tile
5. Features:
   (a) Furniture: NSR
   (b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: Unisex Public Restroom

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting system.
2. Power Supply:

(a) Requirements: NSR
(b) Rating: NSR
(c) Receptacles: NSR
(d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: None
2. Public Address: None
3. Computer System: None
4. CCTV: None
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment:
(a) None
2. Contractor Furnished (CF) Equipment:
(a) None
3. Design Considerations:
(a) Design for ADA accommodations.

H. Environmental Considerations: NSR

25. ROOM TITLE: MECHANICAL ROOM
Functional Narrative: HVAC, Sprinkler System, Water Softening, and Electrical Panel space.

A. Architectural:
1. Size: 400 SF Approx.
2. Occupancy: Daily – 0
3. Proximity to Related Functions:
4. Finishes: NSR
(a) Ceiling: NSR
(b) Walls: Paint or tile
(c) Floors: Tile
5. Features:
(a) Furniture: NSR
(b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
(a) Ceiling Height: NSR
8. Area Identification/ Signage: Mechanical Room

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting system.
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3. Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: None
2. Public Address: Speaker only
3. Computer System: NSR
4. CCTV: None
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment:
   (a) None
2. Contractor Furnished (CF) Equipment:
   (a) Water Softening Equipment.
3. Design Considerations:
   (a) Design for ADA accommodations.

H. Environmental Considerations: NSR

<u>26. ROOM TITLE: COMMON HALLWAYS</u>
Functional Narrative: As needed.

A. Architectural:
1. Size: 400
2. Occupancy: Daily – 4
3. Proximity to Related Functions:
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint
   (c) Floors: Carpet or tile.
5. Features:
   (a) Furniture: NSR
   (b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: None

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:
1. Lighting: Provide motion sensing lighting system. Consider canned low lumens lighting.
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3.) Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: None
2. Public Address: Speaker only.
3. Computer System: None

4. CCTV: None
5. Intercom: None

G. Equipment:
1. Government Furnished (GF) Equipment:
   (a) None
2. Contractor Furnished (CF) Equipment:
   (a) Provide five (5) glass display boards located between office areas.
3. Design Considerations: NSR

H. Environmental Considerations: NSR

27. ROOM TITLE: STORAGE MEZZANINE

Functional Narrative: General storage area for seldom used items. Area will also facilitate training activities such as rope training, ladder training, and confined space rescue.

A. Architectural:
1. Size: As included in architectural design.
2. Occupancy: Daily – 0
3. Proximity to Related Functions: Locate adjacent to Apparatus room.
4. Finishes: NSR
   (a) Ceiling: NSR
   (b) Walls: Paint
   (c) Floors: Concrete
5. Features:
   (a) Furniture: NSR
   (b) Door Sizes and Quantity: NSR
6. Furnishings: NSR
7. Spatial Definition:
   (a) Ceiling Height: NSR
8. Area Identification/ Signage: General Storage or Mezzanine

B. Structural:
1. Ceiling/Roof: NSR
2. Walls: NSR
3. Floors: NSR

C. Mechanical:
1. Heating: NSR
2. Ventilation: NSR
3. Air Conditioning: NSR
4. Plumbing: NSR
5. Safety: NSR

D. Electrical:

1. Lighting: NSR
2. Power Supply:
   (a) Requirements: NSR
   (b) Rating: NSR
   (c) Receptacles: NSR
   (d) Grounding: NSR
3.) Hazardous Classification: NSR

E. Fire Protection:
1. Detection: Per NFPA Requirements.
2. Suppression: Per NFPA Requirements.

F. Communications:
1. Telephone: NSR

G. Equipment:
1. Government Furnished (GF) Equipment:
   (a) None
2. Contractor Furnished (CF) Equipment:
   (a) Provide eight (8) mobile stainless-steel storage racks.
   (b) Provide eight (8) 48" wide storage lockers with locking mechanisms.
   (c) Provide lifting device for heavy equipment to be stored.
   (d) Provide station air compressor for apparatus servicing and building systems.
3. Design Considerations: NSR

H. Environmental Considerations: NSR

28. EXTERIOR CONSIDERATIONS:

Parking areas should be located away from Apparatus Room garage doors. Inward flow of Paid-on-Call personal vehicles should not cross the path of outbound emergency apparatus.

Patio area should include gas grill plumbed to the building natural gas system. Area should have a privacy fence installed that also allows for egress as necessary. Contractor provided equipment includes:

Commercial-grade gas grill
Two (2) picnic tables
Two (2) park benches

Generator Set should be located away from the patio area and sleeping quarters. Contractor to provide at least a 45KW rated generator set; or one large enough to power the entire structure. Generator set should operate on multiple fuel types with the primary source of fuel being natural gas. Generator set should be automatic start with no more than a 15 second time delay to start upon sensing a loss of commercial power.

Building utilities should enter the structure from underground into the Telecommunication Room or the Mechanical Room as necessary. Underground conduit linking the Telecommunication Room, Mechanical Room and Communication Center/Watch Room should be installed. Conduit should be at least 4" in diameter.

CHAPTER 7 - PROJECT PHASES

Project could be completed in phases if an existing site and facility is selected for renovation rather than new construction.

CHAPTER 8- CONTINGIENCIES

Project cost should include contingency line items for additional equipment, office furnishing, and building décor. All items will be coordinated with the Fire Chief prior to selection or installation.

CHAPTER 9 – EFFICIENCY AND MAINTENANCE

Project will include an estimated efficiency and annual maintenance projection of systems. If necessary, coordination with the City and the A&E firm will be conducted to alter systems and services to create additional efficiency.

CHAPTER 10 – APPARATUS PARKING LOCATIONS

To be determined after the orientation of the facility is determined. This will have an effect on the apparatus room services and systems.

CHAPTER 11 – SALVAGE AND DEMOLITION

The project may include a reasonable amount of time for the City to remove structural (plumbing, electrical, etc.) items from any existing structure that may have value to the City's Department of Public Works.

CHAPTER 12 – NATIONAL INSTITUTE OF BUIDLING SERVICES

The following excerpt may serve as additional guidance or reference to consider while designing the most efficient and economic layout during the planning phase of this project.

Fire Station

by Eric G. Mion

Lewis & Zimmerman Associates, Inc.

Within This Page

- **Overview**
- **Building Attributes**
- **Emerging Issues**
- **Relevant Codes and Standards**
- **Major Resources**

OVERVIEW

A fire station supports the needs of the fire department and the community in which it is located. It must accommodate extremely diverse functions, including housing, recreation, administration, training, community education, equipment and vehicle storage, equipment and vehicle maintenance, and hazardous materials storage. While it is usually only occupied by trained personnel, the facility may also need to accommodate the general public for community education or outreach programs.

Fire stations will vary somewhat in design depending on specific mission, i.e., the types of emergencies that will be responded to or the types of fires that will be fought. Usually, the facility differences relate to the size of the firefighting apparatus and facility location. The location of the facility is largely driven by the need to minimize response time. For example, aircraft rescue firefighting (ARFF) stations provide fire protection to flight lines and aircraft and are located adjacent to the runways on airport property. Similarly, stations with hazardous waste response teams are located near likely spill sites, etc.

BUILDING ATTRIBUTES

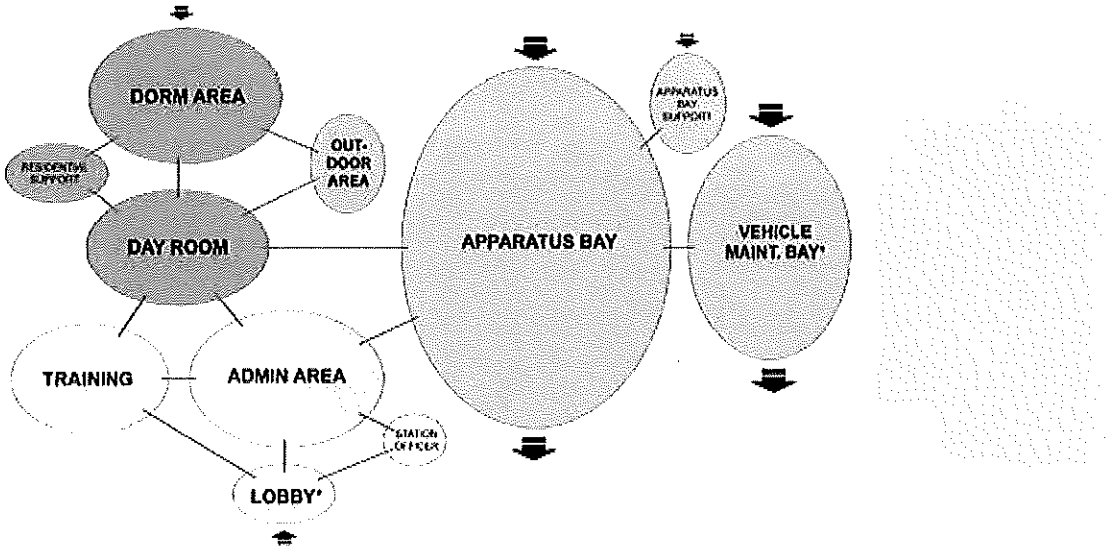
A. Space Types and Building Organization

Major fire station functional areas include the following:

- *Apparatus bay(s):* This is where the fire fighting and emergency response vehicles are stored.
- *Apparatus bay support and vehicle maintenance:* These industrial spaces are where the vehicles and other fire fighting equipment are cleaned, maintained, and stored.
- *Administrative and training areas:* These include offices, dispatch facilities, and training and conference rooms.
- *Residential areas:* These include the dorm rooms, day room/kitchen, and residential support areas such as bathrooms and fitness spaces.

The two primary drivers for facility layout and functional space adjacencies in a fire station are the following:

1. Ensure that internal response times can be met (time for a firefighter to reach the apparatus and be ready to depart).
2. Separate the diverse and sometimes conflicting functions such as industrial maintenance spaces and residential spaces.



Sample adjacency diagram for a fire station.

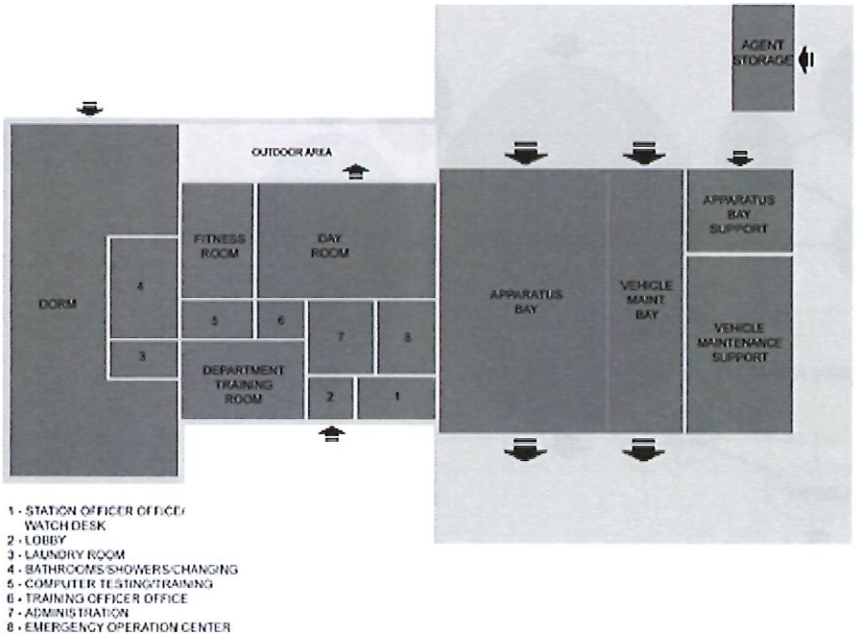
Developed by DMJM Design, Arlington, VA

Apparatus Bays

By placing the apparatus bay between the maintenance and support functions and the residential and administrative functions, both primary layout goals can be accomplished. Some of the adjacencies shown above may be accommodated through a hallway rather than a direct entrance/exit from one space to another. This is particularly true with the apparatus bay and the day room as many facility spaces require an adjacency with these two spaces.

This approach to the layout can also accommodate expansion of the apparatus bay on the other side of the support and maintenance areas, although care must be taken to ensure that internal response times can be met after any expansion.

Sizing the apparatus bay is critical, and it should be designed to accommodate variable vehicle sizes. Typically, the entire room is sized based on the bay size for the largest vehicle in the fleet or the largest anticipated vehicle. Bays also include vehicle exhaust removal systems, compressed air and power drop lines, and hot and cold water connections. Bay doors must also accommodate the largest vehicle and include a manual means to open in case of power failure. Ideally, the site will accommodate drive-through bays.



Sample functional layout for a fire station.

Developed by DMJM Design, Arlington, VA

Apparatus Bay Support and Vehicle Maintenance

Apparatus bay support functions include cleaning and maintenance areas for the firefighter's self-contained breathing apparatus (SCBA), protective clothing, fire extinguishers, and other equipment. It also includes storage areas for firefighting gear and equipment and secure storage for medical supplies. Some of these areas are specialized spaces for disinfecting protective equipment and for maintaining and recharging the SCBA in a clean environment. See also Light Industrial space type.

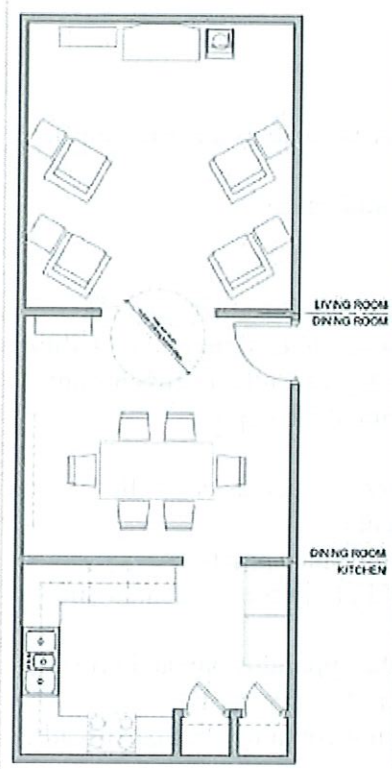
Agent storage is typically provided in a single-story structure separate from the fire station building. It should be located along the drive leading into the Apparatus Bay for ease of loading and unloading of fire fighting agents. In some cases, it may be attached to the main structure.

A vehicle maintenance bay may also be included in a fire station. It is a dedicated maintenance area for the fire fighting apparatus and includes a heavy-duty lift and all utility connections required for large vehicle maintenance.

Administrative and Training Areas

Administrative areas include standard offices and conference and training rooms. The area will also likely include additional specialized spaces such as the chief's office with sleeping and shower facilities and computer training/testing facilities for firefighter continuing education. Some stations may include a highly specialized dispatch room for receiving emergency calls from the public.

Residential Areas



Sample day room layout for a fire station.

Developed by DMJM Design, Arlington, VA

The day room accommodates kitchen, dining, and living/recreation functions. It is often separated into subspaces for those three functions, but an open design may also be effective to encourage interaction between the spaces. The dining space may also double as training or meeting space and might include provisions for audiovisual equipment.

Dorm room design can vary widely from station to station and department to department. Each firefighter is provided with a place to sleep, work, and store personal items. Careful consideration should be given to the location and design of the area to ensure response times can be met. See Emerging Issues below for more information on dorm rooms.

Other residential areas include a laundry room, a physical fitness room, bathrooms and showers, and possible additional recreation spaces such as an outdoor patio and game room.

B. Design Considerations

Key design goals and considerations for fire stations include the following:

Promote Occupant Quality of Life

Fire stations are occupied 24 hours a day, seven days a week by personnel in continuous 24-hour shifts. Therefore, ensuring a comfortable living environment for the firefighters is paramount:

- Provide ample natural light.
- Provide individual dorm rooms, if budget allows.
- Provide ample recreation areas and separate noisy areas (such as a game room) from quieter areas (such as a television room).
- Avoid institutional and unnatural finishes, textures, and colors.

Maintain a Safe and Healthy Environment

As above, due to the continuous occupation of the facility by firefighters and the presence of hazardous materials, special attention must be given to designing the facility to accommodate equipment and operational strategies to both protect the occupants and maintain a healthy environment. Consider the following critical elements:

- Provide a secure facility for both personnel and materials such as controlled medical supplies and hazardous fire suppression agents.
- Use non-toxic building materials and improved maintenance practices.
- Ensure good indoor air quality and abundant natural light in the residential and administrative areas.
- Ensure good ventilation of industrial areas such as the apparatus bay and prevent contamination of clean spaces such as the SCBA maintenance areas.
- Ensure that equipment, furnishings, and finishes do not contain asbestos or lead.

Ensure Flexibility

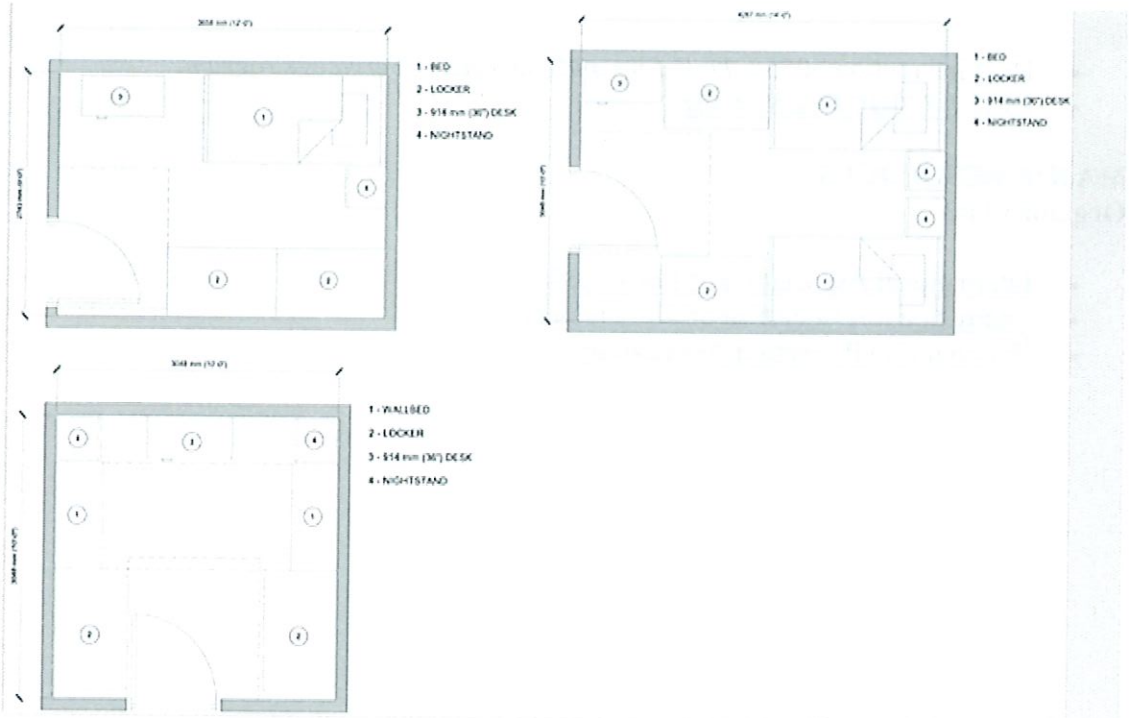
As fire fighting technology evolves, fire stations need to evolve as well. Consider the following areas:

- Plan for potential expansion, both in the apparatus bay area and the residential areas.
- Ensure appropriate product/systems integration.
- Design for the changing nature of work.

EMERGING ISSUES

One emerging issue in fire station design is the additional attention given to firefighter quality of life. As noted above in design considerations, one way to promote quality of life is to provide separate dorm rooms for each firefighter. Typically, each room is shared between firefighters of different crews/shifts so that the room is never occupied simultaneously. Individual lockers are provided for each firefighter. A bed, nightstand, and desk are shared.

Some departments are taking this one step further and providing separate beds for each firefighter. Wall-beds, also known as "Murphy-beds," are also becoming a common alternative. These combine the qualities of an individual bed with added space savings.



Three sample dorm room layouts for a fire station.

Developed by DMJM Design, Arlington, VA

RELEVANT CODES AND STANDARDS

Standard federal and state building codes apply, as appropriate. There are also numerous codes and standards that apply to the staffing and operation of a fire/rescue department; key standards include the following:

- *Airport Rescue and Firefighting Station Building Design Advisory Circular* 150/5210-15, by U.S. Department of Transportation, Federal Aviation Administration (FAA). 1987.
- *Fire Suppression Rating Schedule (FSRS)*, by Insurance Services Office, Inc. (ISO).
- NFPA 403: *Standard for Aircraft Rescue and Fire Fighting Services at Airports*, by National Fire Protection Association (NFPA). 2003.
- NFPA 1500: *Fire Department Occupational Safety and Health Program*, by NFPA. 2002.
- NFPA 1581: *Fire Department Infection Control Program*, by NFPA. 2005.
- NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, by NFPA. 2004.
- NFPA 1720: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*, by NFPA. 2004.

Department of Defense

- DoD Instruction 6055.6 *DoD Fire and Emergency Services Program.*
- *UFC 4-730-10 Fire Stations*

MAJOR RESOURCES

Organizations

- International Association of Fire Chiefs
- International Association of Fire Fighters
- National Fire Protection Association