BRISTOL FIRE DEPARTMENT

Presentation to the Town Space Needs Committee

May 12,2016

- Station built in 1974
- Occupied by an on-call/volunteer Fire Department until ~2000
- In 2000 Fire and EMS merged
- Station now houses EMS equipment, and 24/7 staffing

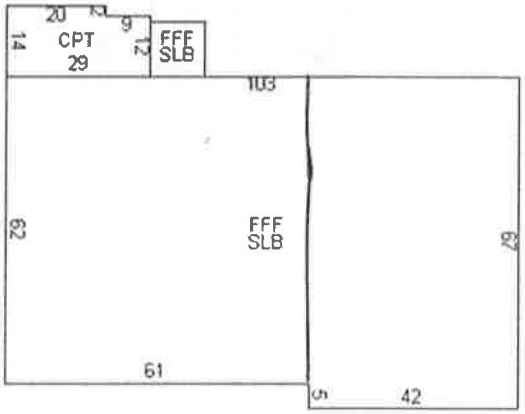
[redacted]

- Fire Chief during normal business hours
- PT Administrative Assistant
- Minimum Duty crew staffing of 2, 24 hours a day/ 7 days a week
- Late August thru Early May: 3 student interns live at the station while attending LRCC or NHTI
- Call staff responding to calls, training, or working on assigned projects
- Training room and other areas of the station are used by public groups throughout the year

[redacted]

PROPERTY OVERVIEW

Administrative Quarters	2814
Apparatus Bay	3782
Total of Primary Building	6596
Fuel Room (FFF SLB square on river side)	~120
Carport on riverside of building	~406



BFD Building Committee

[redacted]

- Established late fall early winter of 2015
- Established a number of areas where information was needed before any planning begins:
- 1. Define current use of Department properties
- 2. Define future space needs through the next 25 years
- 3. Investigate possibility and availability for grant funds
- 4. Contact State officials from DOT and DES in regards to any building at the current location
- 5. Contact Engineers- established cost to evaluate building as it exists and future use

Charge 3

[redacted]

- Very limited grant availability
- Many grants found that will be looked at for up-fit items

Charge 4

[redacted]

- Storm drains- DOT confident that moving pipes will not be an issue, DES concerned that any building or location changes do not increase flow
- Potential foundation repairs- DES will work with department through permitting and project
- Potential expansion of footprint- positive to the town is that nearly the whole property is impervious, and should allow for such projects provided DES is worked with in permitting and project

Charge 5

[redacted]

- No contact with engineers at this point.
- With town committee forming decision made to wait and potentially lump these services together
- Load bearing walls throughout building and foundation at the rear of meeting room need to be evaluated for current use and potential repair
- Foundation and original plans need to be evaluated for ability to build up

Charge 1+2

[redacted]

- This work is mostly complete and found in the report given during this presentation
- Good exercise to find areas that we can improve upon how we use the building
- Limited ability to predict future needs, particular in administrative quarters, due to lack of long-range and strategic planning (department and town)

- Structurally sound? for building up?
- How much of building degrading is because of typical wear and tear that would have been solved w/ routine maintenance?
- Tapped out for mutual aid? Or area for growth?

Look at
Regional growth not just Bristol growth

5/26, 7pm, at Town Office

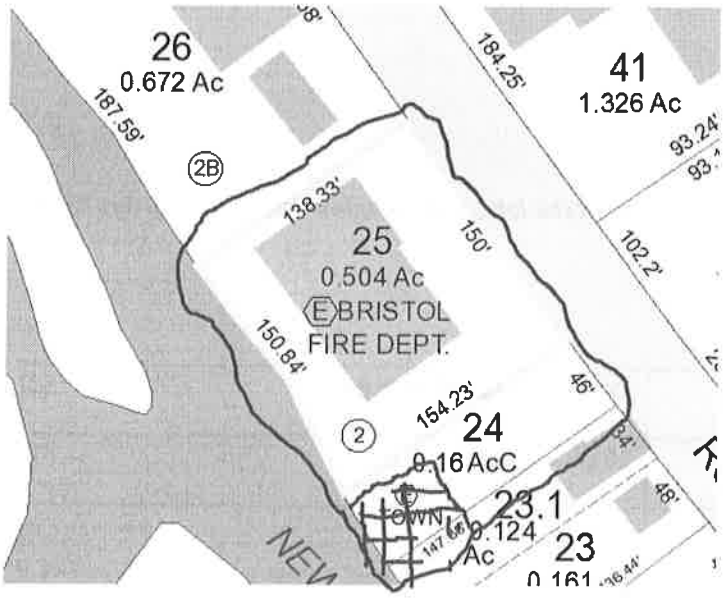
Report to the BFD Station Committee of the Space Needs Subcommittee

First Draft

April 20, 2016

Introduction: This report was generated by the Space Needs Subcommittee. Members of this committee were Aaron Heath, Ben LaRoche, and Steve Thompson. This information was generated with the assistance of other members of the department, call and permanent. The following report is provided to reflect the current usage of space, the actual and/or additional space needs of the department to 25 years in the future, and to provide the data necessary to start to evaluate any potential better uses of space in the current building.

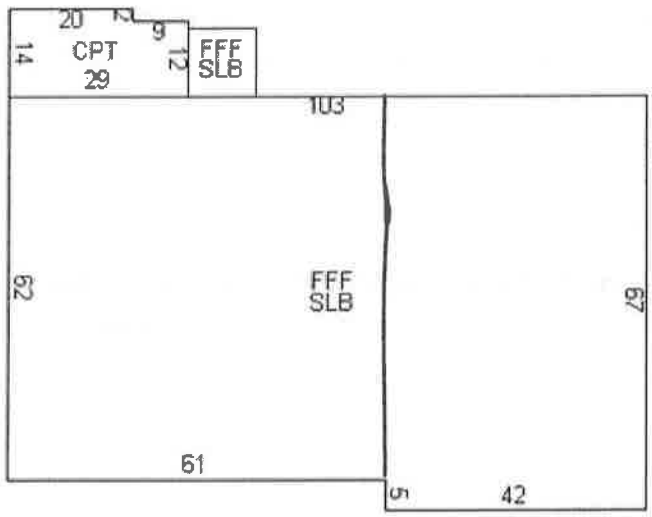
Overview of the Property: The Bristol Fire Department is located primarily at 85 Lake Street. This property consists of 2 lots, 113-025 and 113-024. A copy of the online tax map is available below and provides dimensions of the lot:



The Fire Department primarily operates out of the building located at 85 Lake Street. The layout and dimensions of the property are described within this report. The gridded area in the southern portion of the lot is provided to show the space that is below grade of the station and apron (paved area in front of bay doors), and isn't accessible by vehicle.

The building located on this property that serves as the fire station was built in 1974. The building sits on a slab foundation and is a Type II construction. This type of construction in considered non-combustible having masonry (concrete block) walls and steel truss roof members (warren truss with verticals). The building has a brick façade on the street side. Interior modifications since 2000 have used wood in construction of partition walls that are not load bearing.

The current footprint of the building is below, as retrieved from the property information card:



The red line is provided to delineate the apparatus bay to the left, and the administrative quarters to the right.

Exterior Square Footage:

Section of Building	Exterior Square Footage
Administrative Quarters	2814
Apparatus Bay	3782
Total of Primary Building	6596
Fuel Room (FFF SLB square on river side)	~120
Carport on riverside of building	~406

Parking: Along the guardrail on the South end of the lot: 8 lined spaces

In front of the building at the Main Entrance: space for 4 vehicles (one is usually occupied by the Command Vehicle). Up to 3 more can be parked obstructing other parked vehicles.

Along the North Wall of the building: 2 vehicles may be parked without going over the property line, 4 may be parked at an angle provided permission is received from Park N Go

Total normal spaces: 14

Total parking capacity, with obstruction and permitted use of abutter: 19

The Bristol Fire Department also utilizes space in the lower level of the Old Fire Station located at the intersection of South Main and High Street. This space is shared with the Police Department. Currently the Emergency Management trailer, and miscellaneous tools and equipment are stored at this property. This is an adequate space for this purpose, but has limited additional use primarily based on the climate on this floor of that building.

The department also keeps 4Boat1 docked on Newfound Lake in the open water months, and is stored on private property when it is not in the water. The boat is either at West Shore Marina or Bristol Shores Campground during these times. The dock is located at the North West end of Cummings Beach.

Current Usage of Space: This section will serve to further define the current structure, and how that area is used. Photos of the various rooms and spaces are found in ***Appendix A***.

Apparatus Bay: The Apparatus bay is primarily used for the storage/protection of Fire and EMS Apparatus. While the exterior square footage of this space is **3782 sqft**, the space can be broken down further to the following areas and usage:

Vehicle parking- 3084 sqft

Apparatus: 2 ambulances, 1 Engine/Pumper, 1 Tanker/Pumper, 1 Ladder Truck, 1 Rescue, 1 rescue boat w/trailer. Dimensions of apparatus are found in ***Appendix B***.

In addition this space is used to store:

- each member's Personal Protective Clothing (PPE)
- Gear Extractor (Commercial Washing Machine)
- Decon Sink
- cleaning supplies (brooms, mops, etc.)
- Oxygen cylinders
- and other miscellaneous items that are stored secured to the walls.

SCBA Area- 99 sqft

- SCBA compressor and fill station
- SCBA repair cabinet

Tool Room- 181 sqft

- Cabinets for part, liquid, electronics and tool storage
- Workbench with vise, benchgrinder
- Drill Press
- Stairs to mezzanine

Boiler Room- 84 sqft

- Two oil burning boilers
- Hot water superstore
- Limited storage

Electrical Room- 62 sqft

- Electrical Panels, with generator transfer switch
- Telephone and dialer for municipal fire alarm system
- Clothes Dryer
- Station air compressor

Hose Tower- 50 sqft

- 30 feet tall
- Spare hose storage
- Hanging system for drying fire hose

Mezzanine- 364 sqft

- This is a "second floor" space located only above the tool, boiler and electrical rooms
- Chimney from boilers passes through it
- Exhaust removal motor (PlymoVent) is located here
- Primarily misc. storage
- controlled access room for storage of PPE, Radios, pagers, EMS equipment, and files

Administrative Quarters: This section of the building not only sees the most use, but sees multiple uses in most every individual space/room. This is the section of the building is used as office/work space, eating and sleeping quarters for duty crew and other employees, storage, exercise, bathrooms, training/meeting space, and the towns EOC as needed. Again recognizing that the total exterior square footage is **2814 sqft**, the space can be broken down further to the following areas and usage:

Radio Room- 112 sqft

- Admin. Assistant office/greeting area
- Multiple radios for various communications
- Municipal fire alarm control
- Multi-purpose copier/fax/scanner
- File storage

Day Room- 192 sqft

- Office space for emergency responders
- 2 computer terminals
- File storage
- Lounge for personnel, that doubles as sleeping space in larger emergency operations

Chief's Office- 140 sqft

- Office/work space for the Fire Chief
- File and reference storage
- 2 chairs for limited meeting capabilities
- Network server location

Middle Room- 160 sqft

- File storage
- Intern uniform storage
- Work space for student interns

EMS Room- 126 sqft

- Medical supply and pharmaceutical storage
- Cleaning supplies
- Paper goods/stationary storage
- File storage
- Portable oxygen cylinder storage
- Battery charging station for radios and medical equipment

Kitchen- 148 sqft

Training Room- 880 sqft

- Training/Medium group meeting space
- Eating space
- Assigned EOC area
- Exercise area
- File storage
- Refrigerator and freezer
- Memorabilia/ Antique Fire equipment storage

Bathrooms- 204 sqft

- 2 bathrooms each very similar
- Single toilet
- Shower stall
- Sink
- School style lockers for personal items and toiletry storage, additional storage on top

Bedrooms- 259 sqft

- 5 total bedrooms each between 45 and 62 sqft
- 3 located off Middle Room and are assigned to a Student Intern
    - Each has a bed, dresser and shelf storage for personal items
- 2 located off the Day Room and are assigned to the On-Duty Crew
    - Each has a bed, nightstand, and a set of 3 lockers (one for each permanent Firefighter)

Remaining space is hall space that also has coat rack space, the ticker tape for the municipal fire alarm, information boards and department mailboxes.

Fuel Room: ~120 sqft

- Heating Oil storage tanks
- Storage of misc. equipment including seasonal items like AC units

Carport: ~ 406 sqft

- Forestry Truck
- Forestry trailer
- Trash storage
- Building supply and training prop storage

Current and Future Space Needs: The following sections are designed to take into account not just the current space needs of the fire department, but presumptive future needs of the department to meet its current and evolving mission. It should be noted that at this time there is limited planning documents available in house to make an accurate assessment of future needs of the department. The subcommittee that worked on this paper is very familiar with trends in available data, current job functions associated with the department's mission, as well as the limitations and opportunities that exist with the current building. For these reasons the subcommittee is confident that the following Space Needs recommendations are well thought out, and should be seen as the minimum needs of the department over the next 20-25 years.

Additional Apparatus space- 720- 864 sqft

The exact square footage would be variable upon layout. At a minimum the department needs to find additional space that can accommodate ambulances of ~27' in length. Changes in ambulance manufacturing will require this even though the increased length will not significantly affect the overall capabilities of the vehicle. The department also needs to remain mindful that as the Rescue nears a possible replacement a look at the operational needs will dictate how that vehicle is replaced. That piece of apparatus could be replaced in kind with a length of ~22', but an operational assessment may find that the vehicle be replaced by one that is up to or over 35' in length.

Additional consideration should be given to interior storage of the Command Vehicle, Forestry, and working space. Currently it is not possible to provide climate controlled storage of these vehicles, and space to perform maintenance, repairs, and training in the apparatus bay is extremely limited.

Gear Room- ~550 sqft

This would allow for clean and separate storage of PPE. This space would bring the department into alignment with consensus standards (NFPA) on the storage and maintenance of Firefighting ensembles. This space would allow for a total of 40-45 locker spaces and area to effectively don and doff PPE with multiple responders at the same time. The following notes are made as the design of this space is considered:

- Minimum of 12 sqft per locker space (2'x2' locker with 4' open space in front of each locker)
- Minimum width of the room would be 6' considering the above recommendation

Decon Room- Min. 132 sqft

This would move the washer, dryer, decon sink, and hanging space for equipment to a centralized space where appropriate precautions can be taking to avoid cross contamination. The following items should be considered in design:

- Water, sewer, 220V (possibly 3 phase) electricity
- Floor drain
- Easily cleaned and waterproof walls and floors

Duty Office- 80-100 sqft

This would provide 2 work stations similar to what is currently found in the day room. Administrative work by the duty crew would be done in a quiet, not shared space. This would also provide an area to effectively communicate and work on activities while the day room is occupied by additional staffing.

Public Use Bathroom- 40 sqft

Simple half bath that could be accessed by the public and members. This would allow a restroom that wouldn't be tied up for long periods of time as personnel would shower, decon, and perform other hygiene in the other two bathrooms. This would also allow the department to specifically designate bath/shower rooms by gender.

Communication Space- 60-80 sqft

Changes in department operations and space use has impacted the available space and its usefulness for communication from the station. This space would need to take the following into account:

- Access to up to 3 radios (including the HAM radio)
- Computer terminal
- Minimum 1 seat with space for 2
- Can be part of a shared space within a low use office

Bedrooms- 120-180 sqft

Current operations of the department do not allow for sleeping quarters for additional staffing. The department currently sees this need with seasonal or event staffing increases, and these personnel are assigned to a recliner for rest during overnight operations.

Though the department continues to see an increase in recent years in call volume, this trend is not so severe to suggest that daily staffing will need to be increased immediately. However, when considering space needs out to 25 years in the future it would be irresponsible to dismiss the possibility of staffing increases in that time. Considering the possibility that call volume will increase at an average of 4-5% per year, in 20 years the department may see a call volume of up to 1800+ per year in 20 years. This number supports the addition of 3 sleeping spaces, one to two for additional regular staffing with space available for emergency or seasonal coverage.

Changing/Locker Room- ~300 sqft

Due to the nature of the work performed by the fire department, namely the toxic, hazardous, and less than sanitary environments that are worked in, the department has policies that are designed to limit cross contamination and members bringing carcinogens and contaminants home with them after a shift. As noted in the current space usage the duty bedrooms also serve as this locker space now. This presents difficulty both in the space available and as crews attempt to come off and go on shift. It also means changing out of contaminated uniforms in the regular sleeping quarters.

Changing/Locker Room space would provide a dedicated area for this process. This would decrease contamination issues, provide ample room for changing, and ensure that members are ready to work upon the start of their shift and through to the end.

This space should be divided into two separate areas that are gender specific. When designing the Male Locker Room, a minimum of space for 9 lockers should be provided, with a minimum of 5 locker spaces available in the Female Locker Room. When deciding upon these numbers the assumption was not made that there would be 16 permanent members of the department. These numbers reflect the potential staffing levels in 25 years and provide for a wide variation in gender diversity of that staff.

Exercise Space- ~200 sqft

The ability for the department's members to maintain their individual health and wellness is an important component of ensuring an ability to respond effectively to the intense physical work performed in the Fire Service, maintaining morale, and decreasing work related injuries.

The department currently utilizes space in the training room for this function, but the space is inadequate, takes away from seating space in that room, and doesn't provide an appropriate space for exercise activities.

This additional space need should be considered as an increase in space, but does not need to be independent of another space (such as an additional 200 sqft added to the training room).

Additional Administrative Office- 140 sqft

When looking at the information provided under additional bedroom space it becomes logical to suppose that an additional administrative employee will also become necessary to support the increase demand in training, HR, documentation, and operations of that staff and call volume. Even outside of this future need the department does not have an additional office space to support the functions of the Deputy Chief, Training Officers, and special project managers of the department. This space will provide needed work space and file storage for these functions and can evolve with the department.

Conference Room- ~250 sqft

This room should be designed in such a manner to support a variety of uses. Currently the Chief's Office only supports very limited meeting function. A conference room would be used by administration in group discussions involving plan review, committee reports, contract discussions, and smaller educational classes. The conference room would provide an additional space for town functions. This space would ensure that the department can continue to support large group trainings in the training room, but ensure that shift training can still be conducted without interruption or scheduling difficulties.

This room should also be looked at in a dual purpose for EOC operations as discussed below.

EOC- It is important that the EOC can be functionally independent and separate from eating/standby/operation space. Currently when the EOC is activated it is located in the training room. This means that Emergency management operations are taking place in the same space as meals, emergency operations, personnel staging and additional sleeping quarters. The separation of these spaces is vital to ensuring that operations of the EOC and emergency response operations can continue without interference in chaotic and stressful disaster situations.

Totals- In considering the current and future space needs of the Fire Department the following totals are provided as reference.

- When adding in the current and future space needs these numbers would be indicative of floor space only.
- Additional exterior and interior walls would increase these totals, but vary depending on layout, design, and construction used.
- The totals would increase for hallways, access construction, and egress requirements that would vary depending on layout, design, and construction used.
- These totals include the fuel room, and the floor space of the mezzanine.
- These totals do not take into consideration providing interior storage space for the command vehicle and forestry,
- nor does it include the carport space or space use at other properties.

"Maximum" additional space needs-	2836 sqft
"Minimum" additional space needs-	2612 sqft
Current overall space-	7080 sqft
"Maximum" additional space needs, plus current space-	9916 sqft
"Minimum" additional space need, plus current space-	9692 sqft

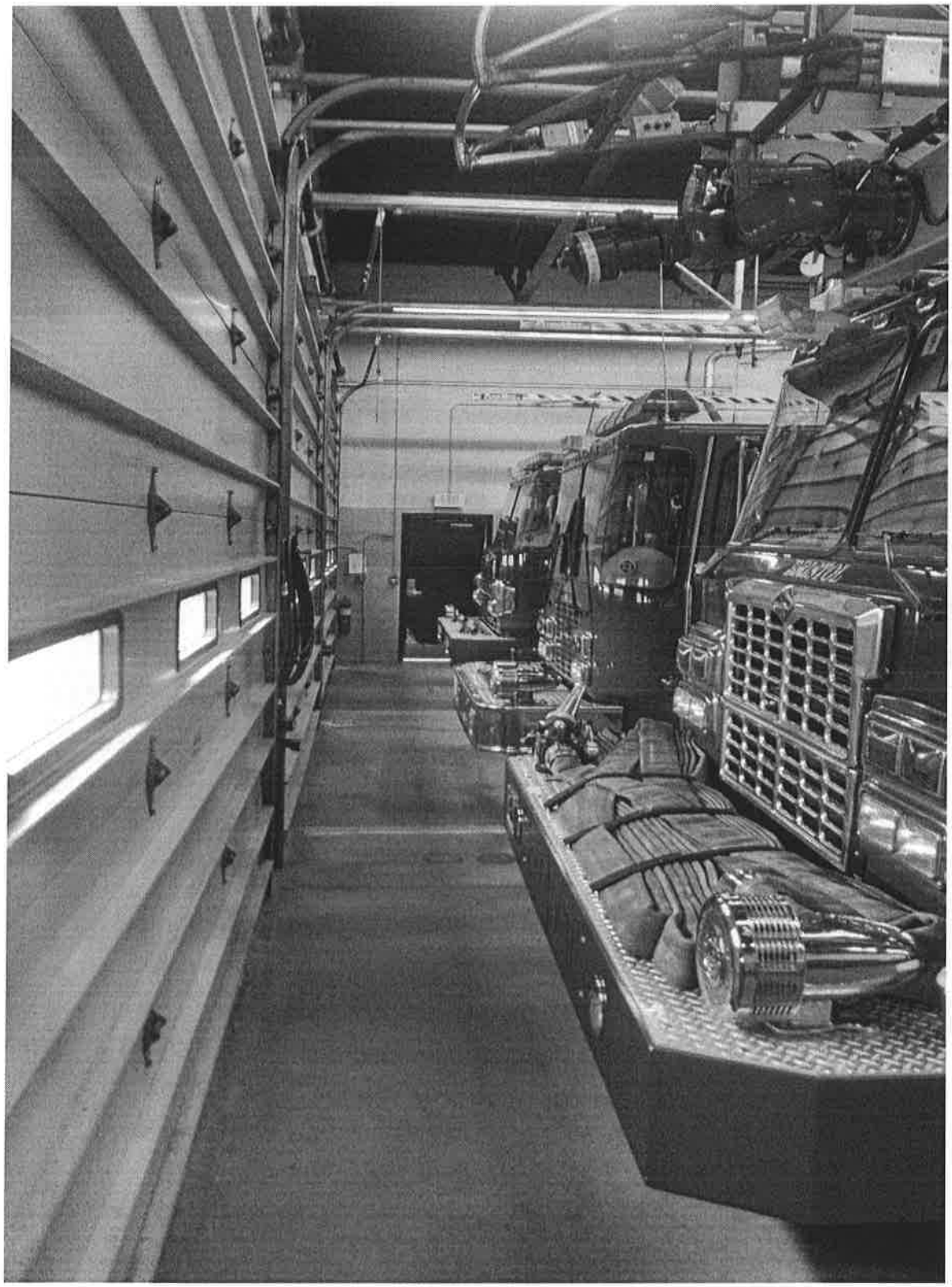
Appendix A

Apparatus Bay:

Ambulance bay and gear extractor-

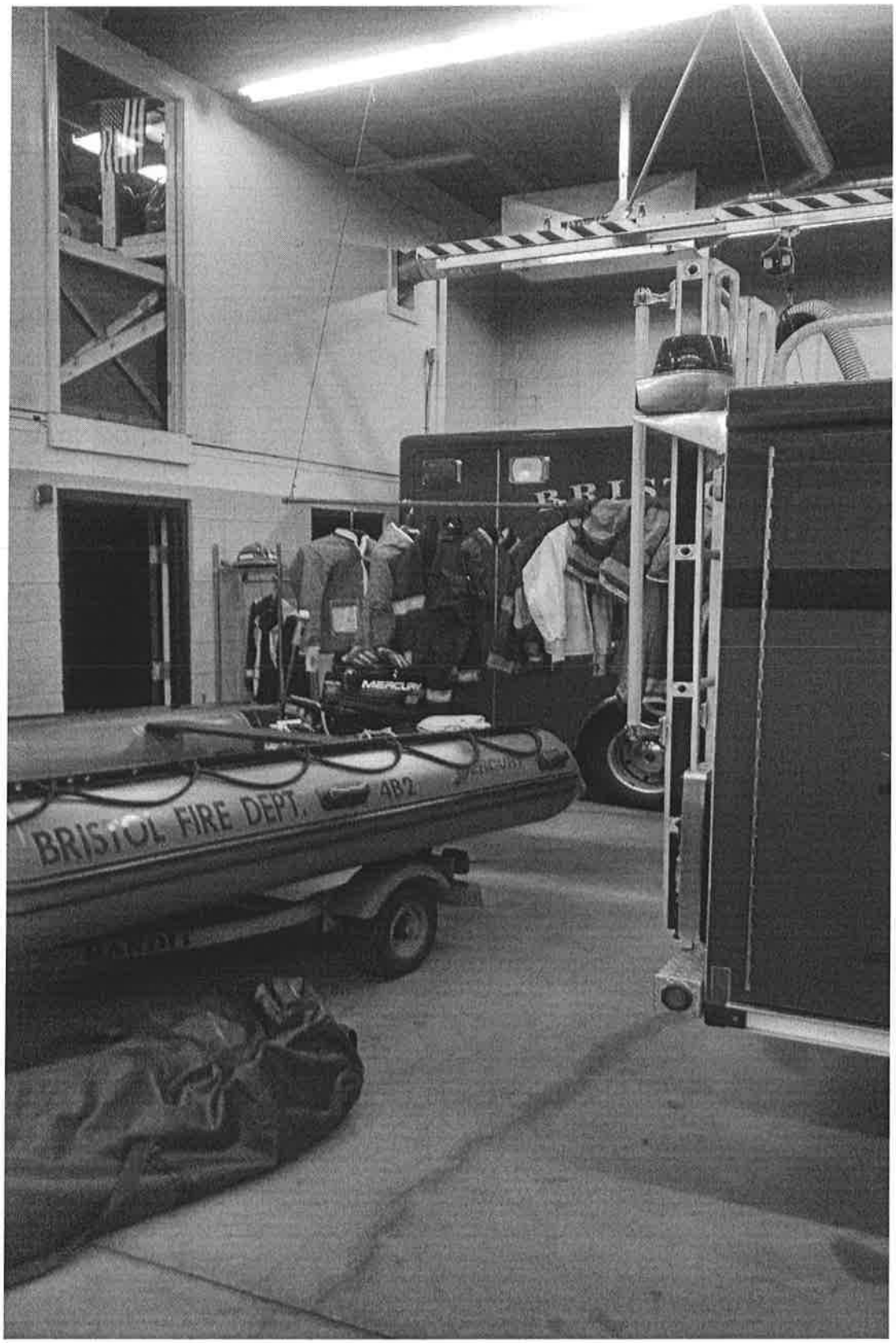
Ambulance bay, Ladder 1, and drying rack-

Along front of apparatus-

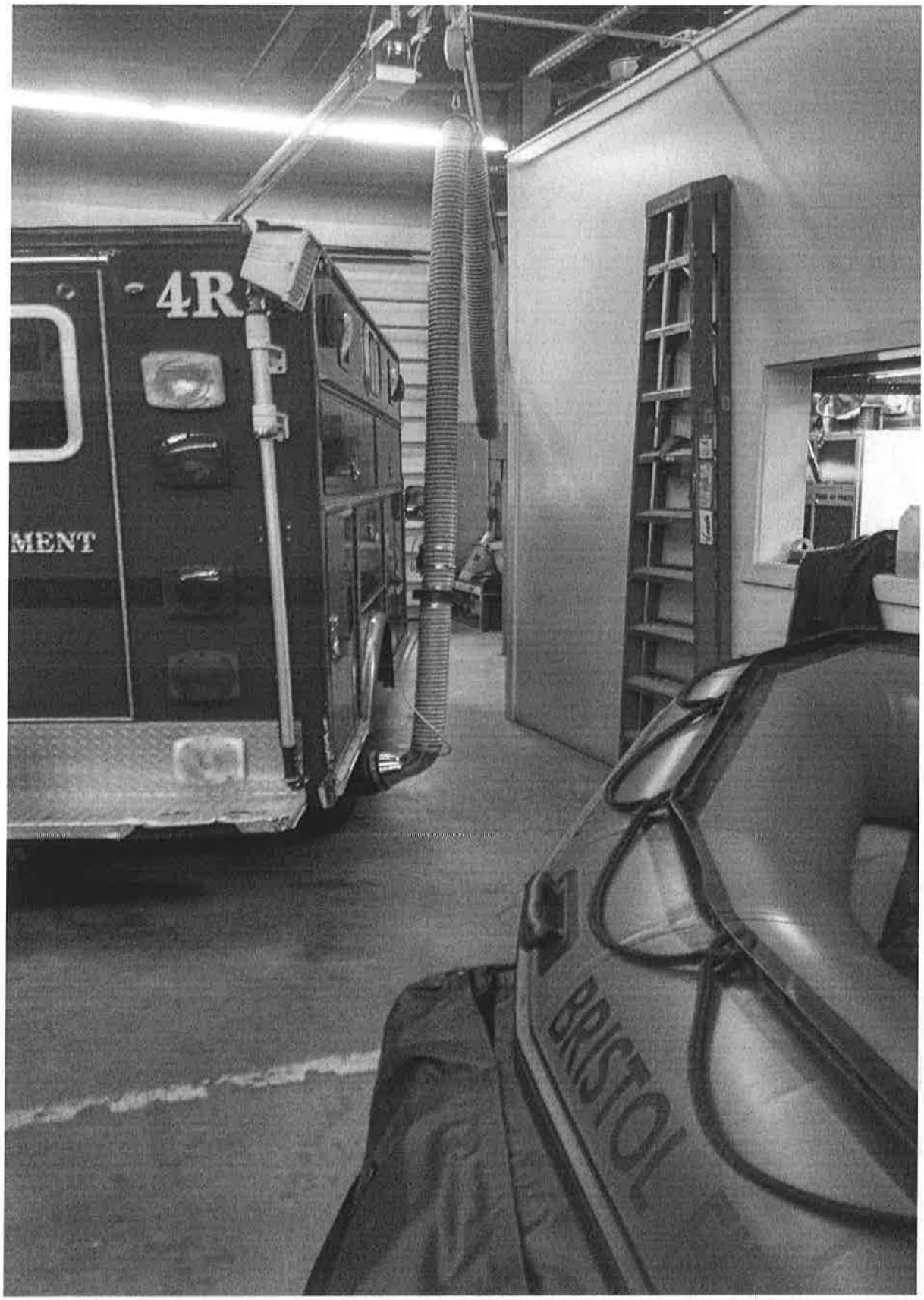


Rear of Ambulance 2 and Oxygen Storage-

Rear of Ladder 1 and Boat 2-

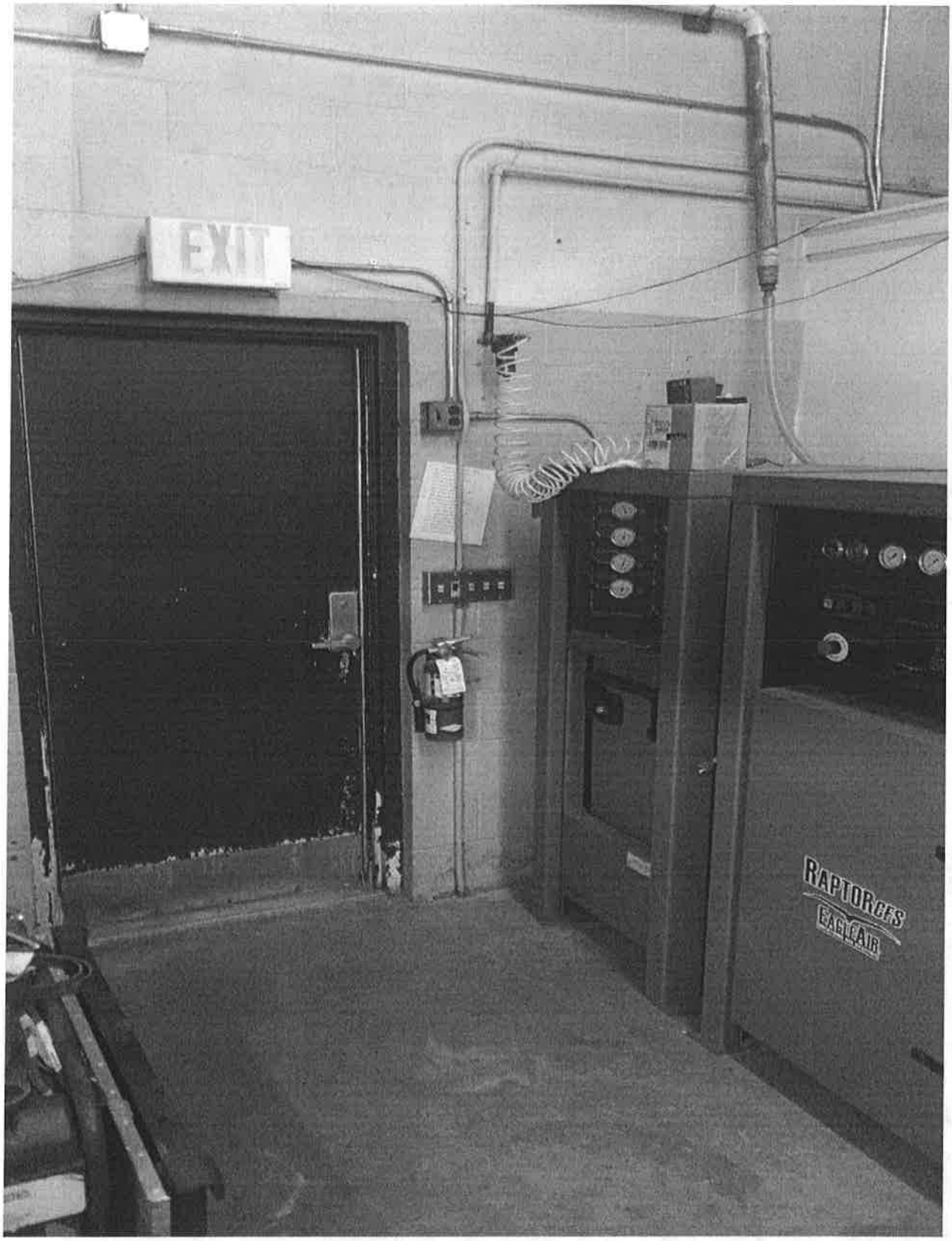


Right side of Bay 5-

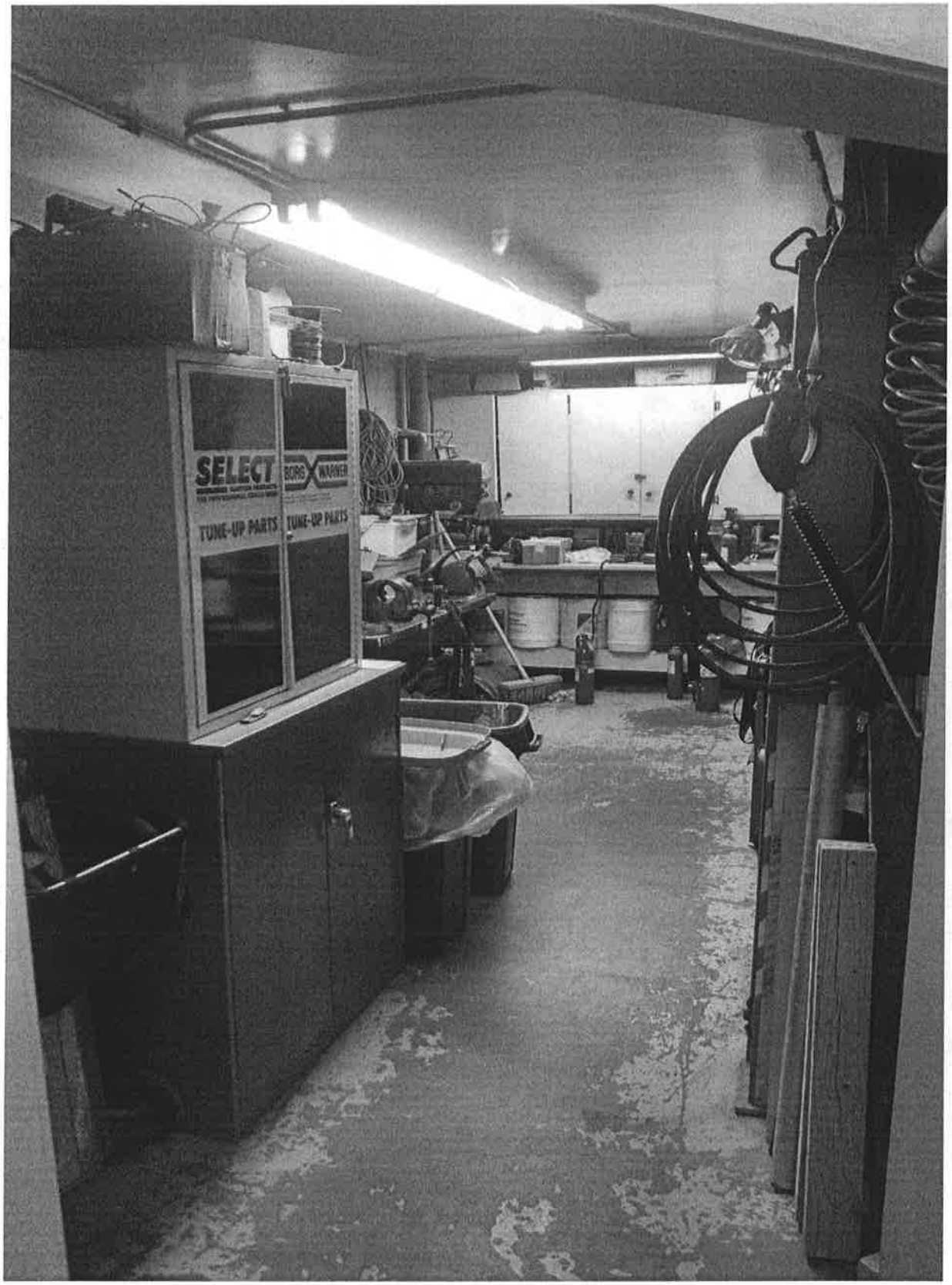


Left side of Bay 5-

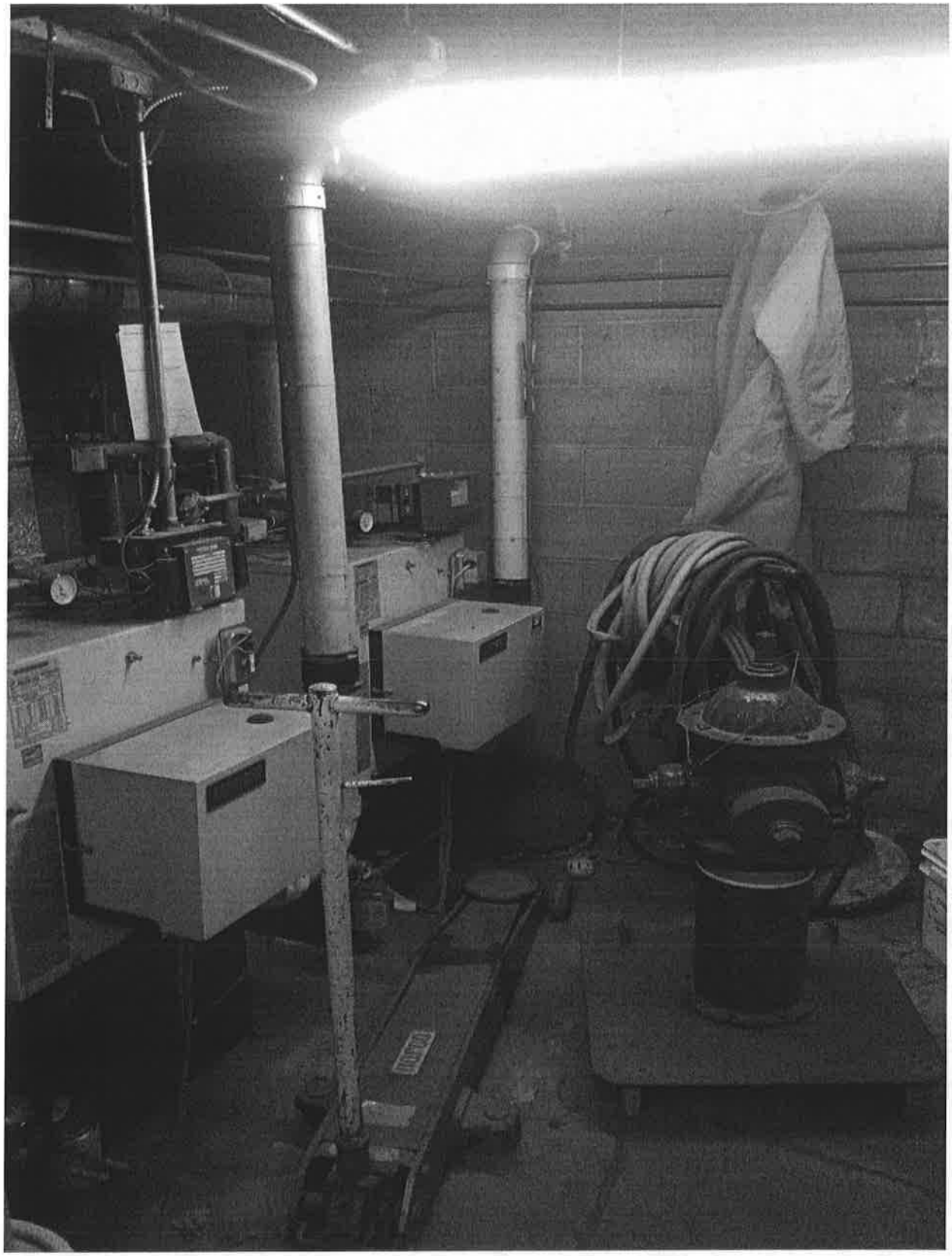
SCBA Area-



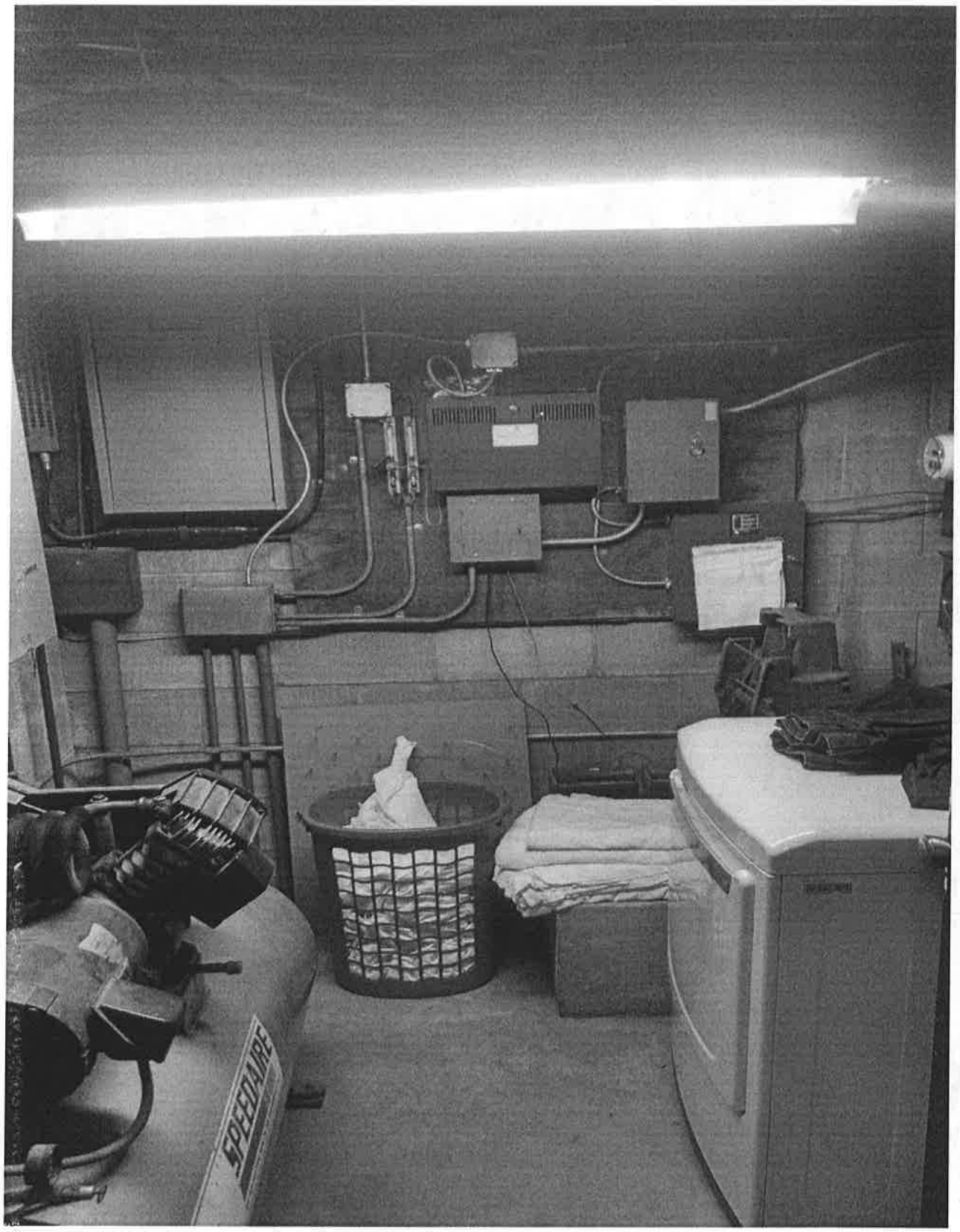
Tool Room-



Boiler Room-

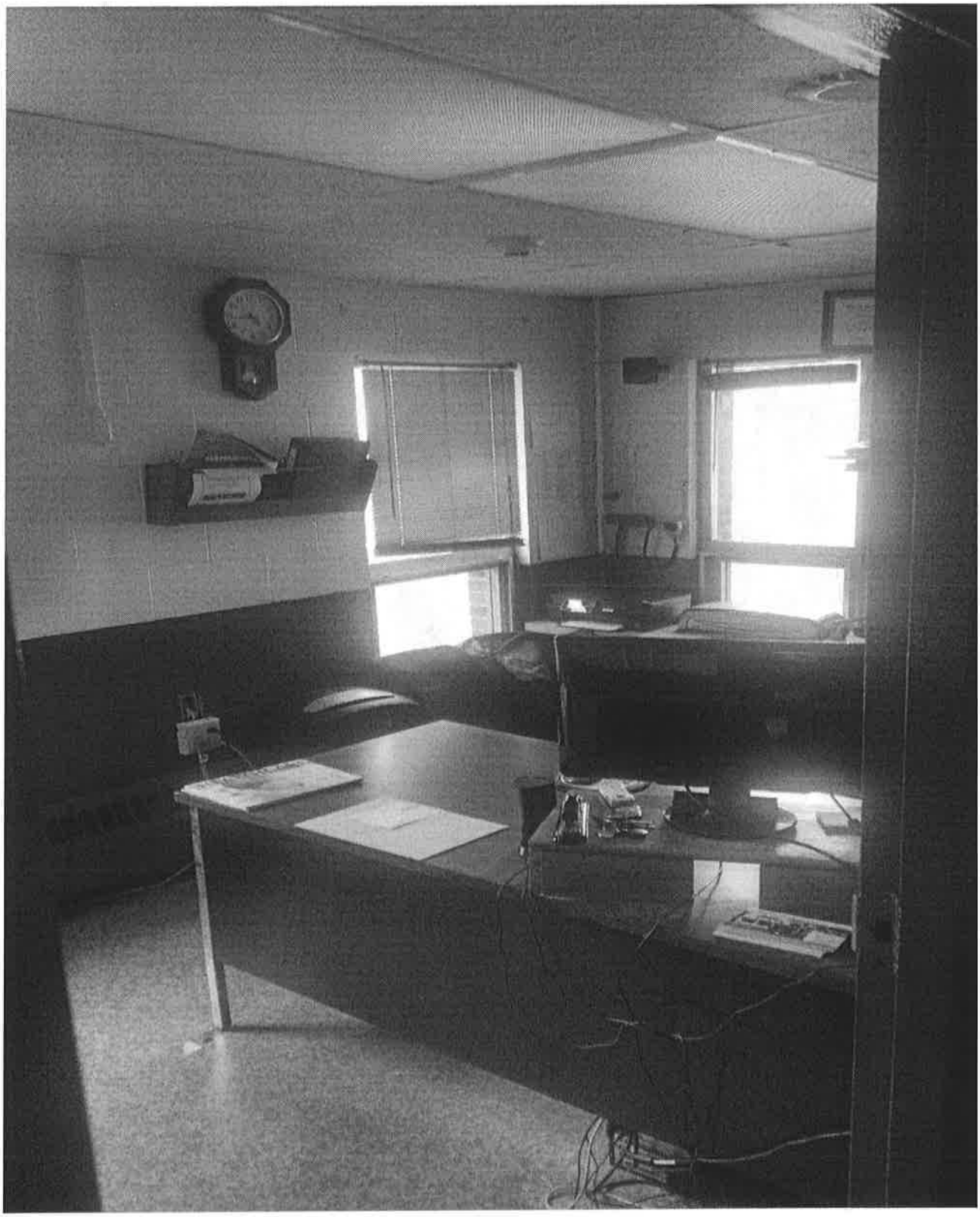


Electrical Room-

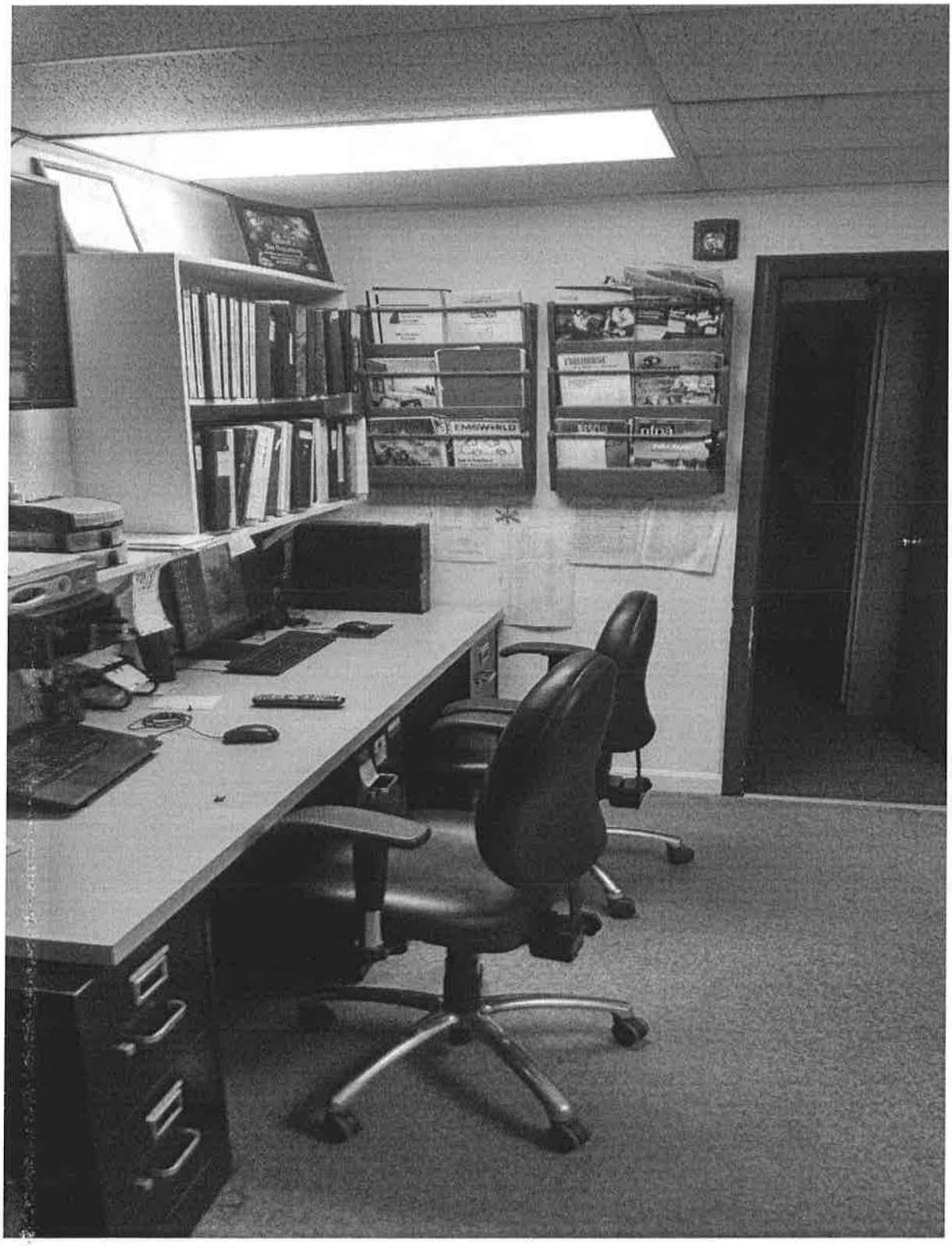


Administrative Quarters:

Radio Room-

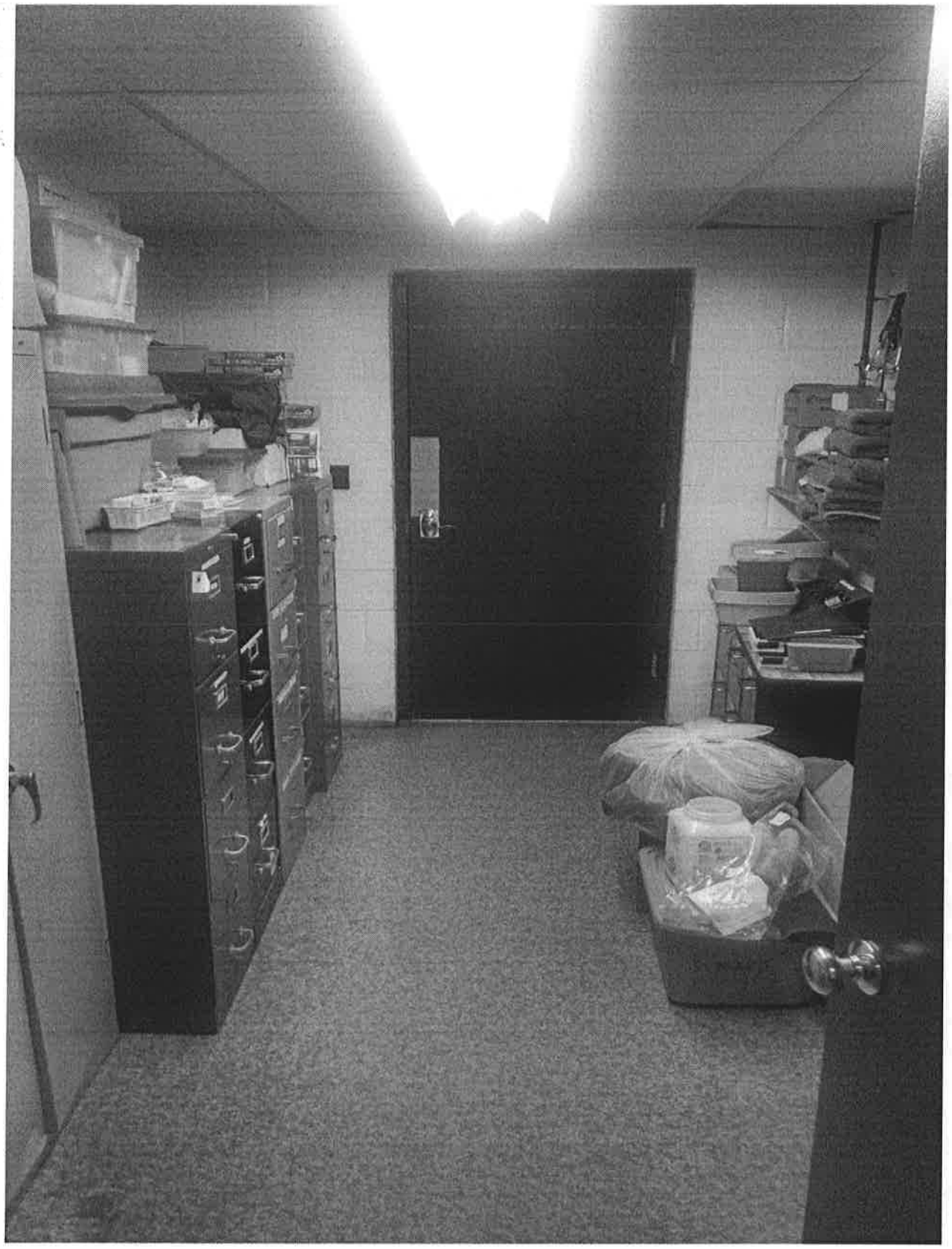


Day Room-



Middle Room-

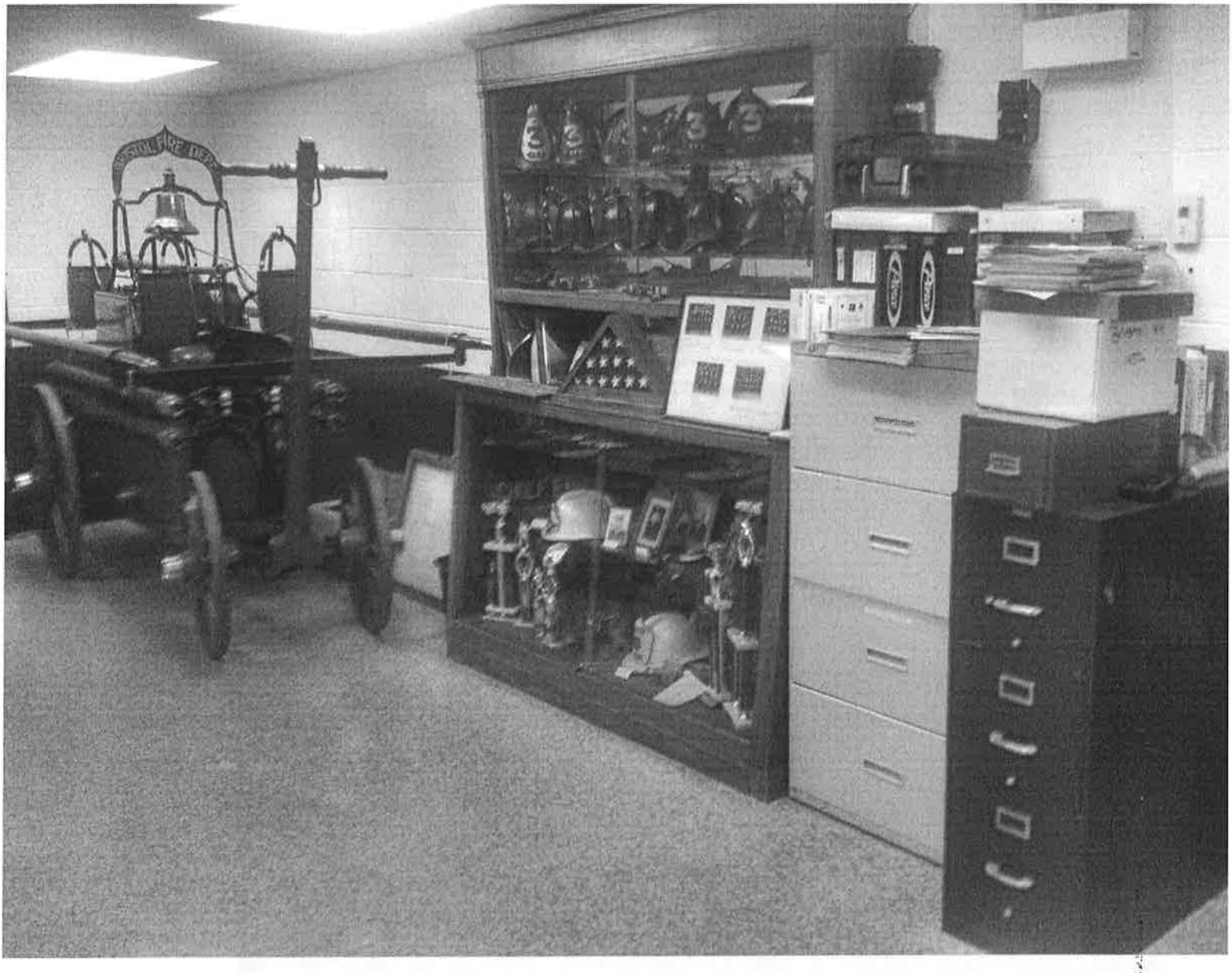
EMS Room-



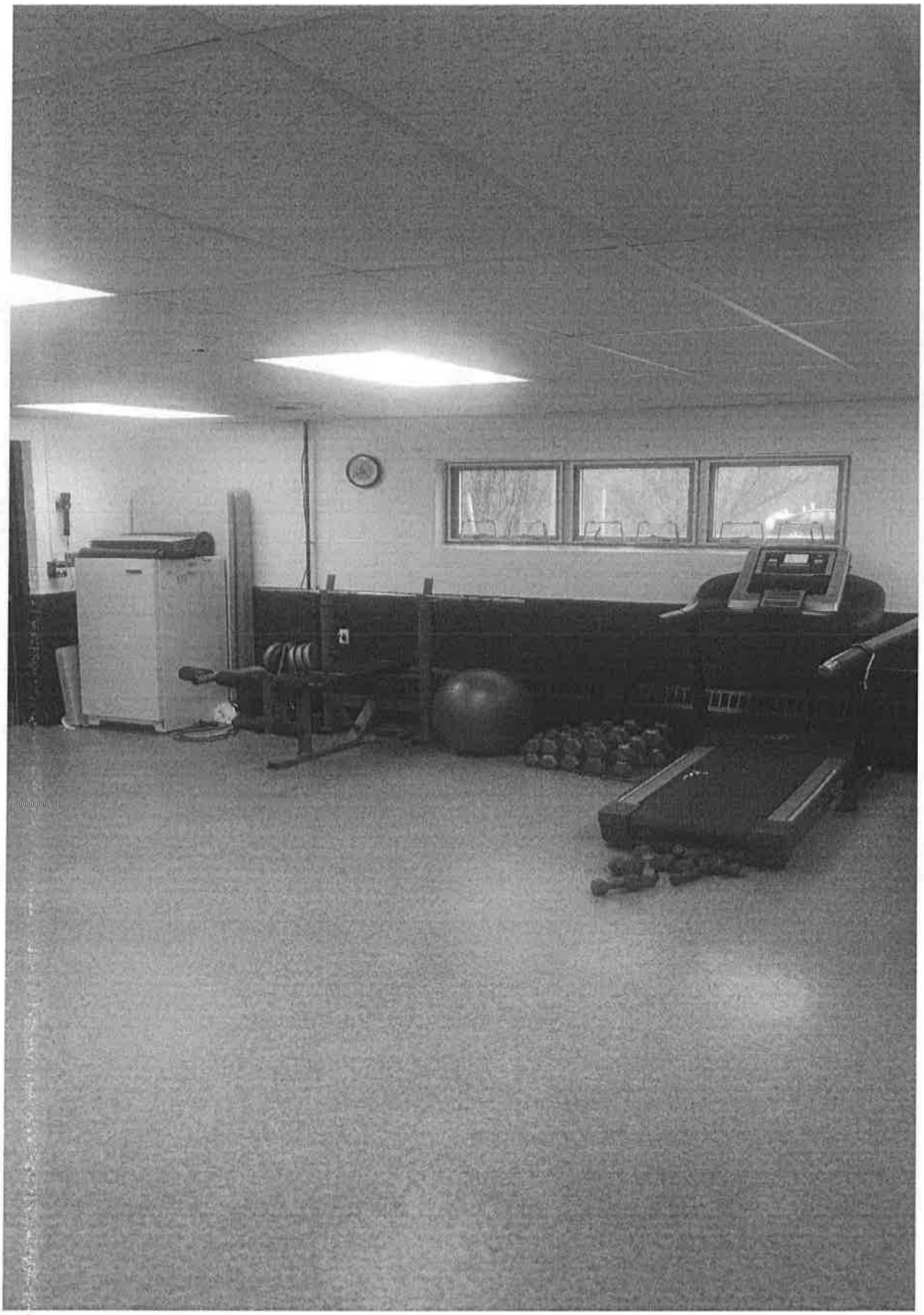
Kitchen-

Training Room Meeting/Dinner Table-

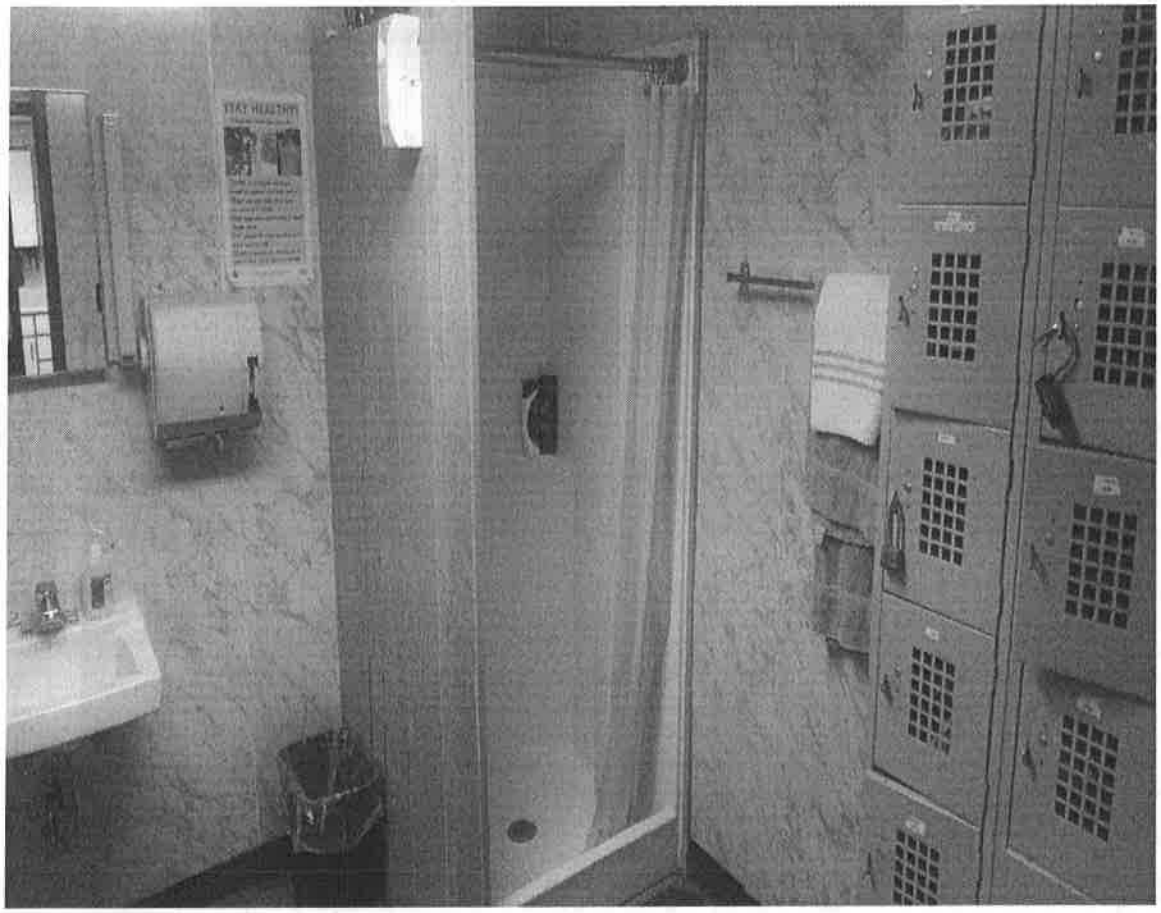
Training Room Museum and file storage-

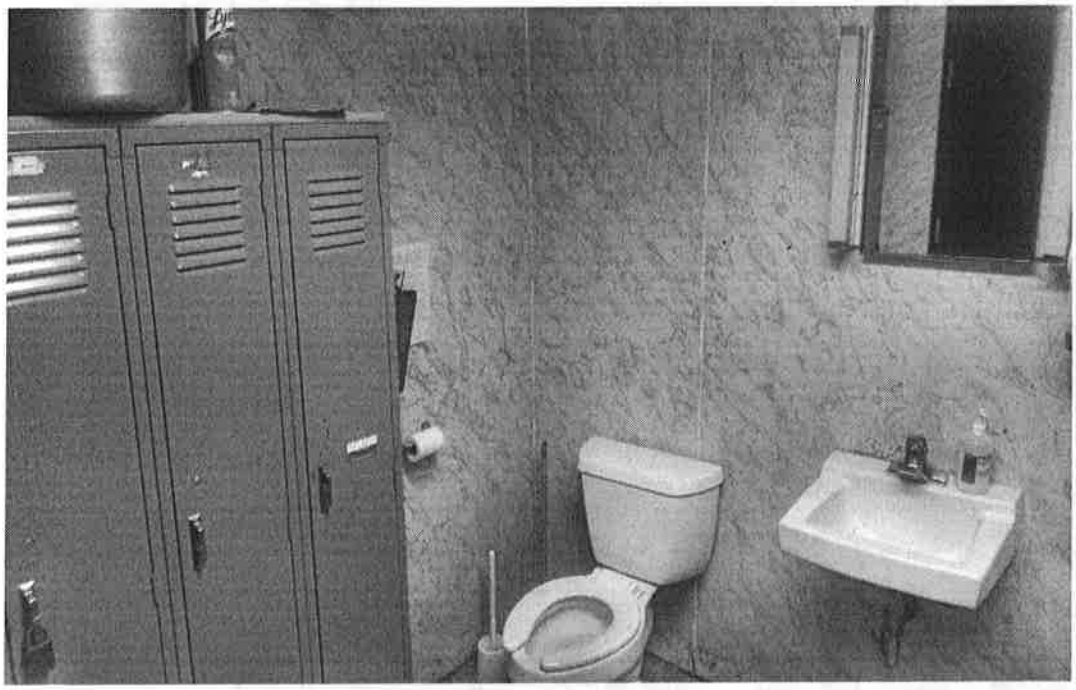


Training Room Exercise area-

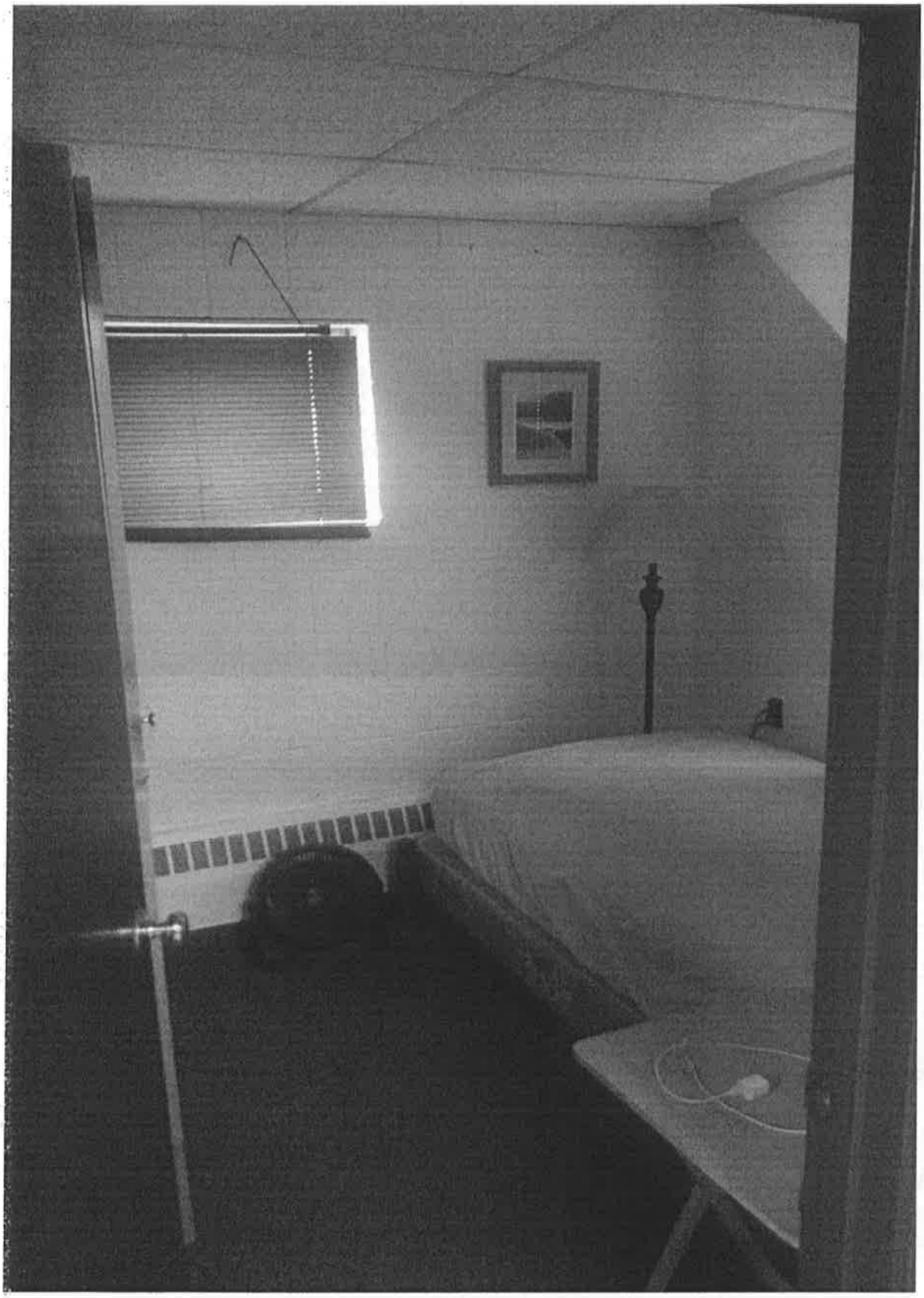


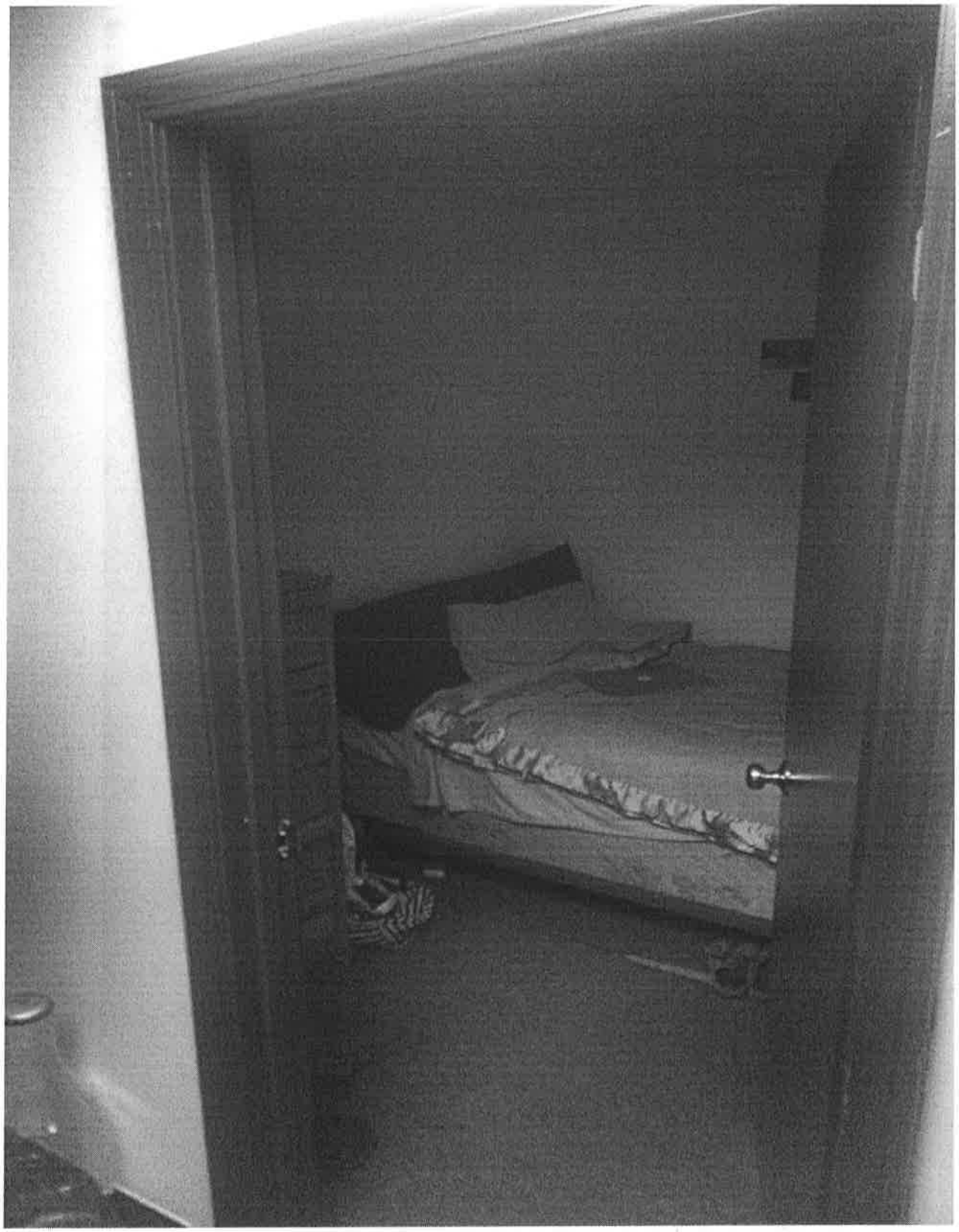
Bathrooms-





Bedrooms-





Carport-

Appendix B

	Width	Length
Ambulance 2	8'2"	24'1"
Ambulance 1	8'1"	24'
Ladder 1	8'8"	38'4"
Engine 2	8'8"	31'6"
Engine 4	8'8"	35'2"
Rescue 1	8'5"	22'4" + 5" with trailer hitch
Boat 2	6'8"	18'3"
Forestry 1	6'11"	17'7"
Forestry Trailer	4'10"	9'3"
Car 1	7'	17'7"
Emergency Mgmt. Trailer		