A **Raytheon** E-Systems Company

THE AML/J Library

Planning Guide

Copyright © 1996 EMASS, Inc.
All rights reserved.

No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage or retrieval system, except as may be expressly permitted by the 17 U.S.C. §101, et. seq., or in writing by EMASS, Inc.

This document contains subject matter in which EMASS, Inc. has proprietary rights. Use, duplication, or disclosure by the Government is subject to restrictions as set forth in the definition of limited rights in (a) (15) of the "Rights in Technical Data and Computer Software" clause in DFARS 52.227-703 and / or similar or successor clauses in the FAR, DoD, or NASA FAR Supplement. Contractor is EMASS, Inc., 10949 East Peakview Avenue, Englewood, Colorado 80111.

Although the material contained herein has been carefully reviewed, EMASS, Inc. does not warrant it to be free of errors or omissions. EMASS, Inc. reserves the right to make corrections, updates, revisions or changes to the information contained herein.

EMASS is a registered trademark of EMASS, Inc.
AML / J is a trademark of EMASS, Inc.
Other trademarks are property of their respective owners.

Document number: 600338-B
Published: 10 Oct 1996

Contents

1

Introduction

Overview 1-3

Intended Audience 1-3

Organization 1-3

Associated Documents 1-4

Assistance 1-4

2

System Description

Overview 2-3

System Operational Flow 2-3

Hardware Components 2-4
- AMU 2-4
  - Hardware Component 2-5
  - Software Component 2-5
- Handling Unit 2-6

Robot 2-7
Storage Segment 2-8
Linear Racks 2-8
Drive / Control Cabinet 2-9
Insert / Eject Unit 2-10
Expansion Unit 2-12
Drive Unit 2-12

Software Components 2-13
MVS Support 2-13
Host Control Component (HCC) software 2-13
UNIX Support 2-14
AMASS software 2-14
DataMgr software 2-14
FileServ software 2-15
VolServ software 2-16
DAS software 2-16
Archive Management Software Support 2-17

3

System Specification

Overview 3-3

Physical Specifications 3-3

Electrical Specifications 3-4

Performance Specifications 3-5

Environmental Specifications 3-5

Regulatory Specifications 3-5

Media Quantity Specification 3-6

Flooring Requirements 3-8

Barcode Requirements 3-8

4

System Configuration

Overview 4-3

Base Level 4-3

Media Types 4-4

Drive Types 4-5

Insert / Eject Media Boxes 4-6

Control Cabinet Drive Shelves 4-6

Drive Cabinet Drive Shelves 4-7

Base Unit Media Type Segments 4-8

Expansion Unit Media Type Segments 4-9

Modem 4-10

Software Types 4-11

Host Connection 4-11

Communication Software 4-11

Special Engineering Request 4-11

Customer System Layout 4-12

5

Survey Data

Overview 5-3

General Information 5-3

Physical Environment 5-4

Customer Room Layout 5-6

Site Preparation 5-7

Power Circuits 5-7
Telephone Connection 5-7
Customer Building Layout 5-8
Access Conditions 5-9
Additional Comments 5-12

Figures

Figure 2-1 AML/J Example Configuration 2-3
Figure 2-2 Handling Unit 2-6
Figure 2-3 Robot with Storage Bins 2-7
Figure 2-4 Linear racks 2-8
Figure 2-5 Drive/Control Cabinet 2-9
Figure 2-6 Insert/Eject Unit 2-10
Figure 2-7 Insert/Eject Unit (IE/F-D) 2-11
Figure 2-8 Expansion Unit. 2-12
Figure 4-1 Customer AML/J Configuration Layout 4-12
Figure 4-2 Example AML/J ConfigurationConfiguration 4-13
Figure 4-3 Cutout Examples 4-13
Figure 5-1 Room Layout 5-6
Figure 5-2 Building Scale. 5-8

Tables

Table 3-1 AML/J Component Physical Dimensions 3-3
Table 3-2 AML/J Component Electrical Specifications 3-4
Table 3-3 AML/J Drive Component Electrical Specification 3-4
Table 3-4 AML/J Performance Specifications 3-5
Table 3-5 AML/J Environmental Specifications 3-5
Table 3-6 AML/J Regulatory Specifications 3-5
Table 3-7 AML/J Media Segment Quantity 3-6

1

Introduction

Overview 1-3
Intended Audience 1-3
Organization 1-3
Associated Documents 1-4
Assistance 1-4

Overview

This manual contains information that outlines the AML/J library [1]. The topics discussed in this section of the manual are:

- Overview
- Intended Audience
- Organization
- Associated Documents
- Assistance

Intended Audience

This manual is prepared for salespersons and perspective purchasers of the AML/J library.

Organization

This manual contains chapters detailing the AML/J library. The chapters include:

Chapter 1	Introduction - Describes the overview, intended audience, organization, associated documents, and where to acquire additional assistance.
Chapter 2	System Description - Describes general information about the AML/J library components.
Chapter 3	System Specifications - Describes the physical and electrical specifications of the AML/J library components.
Chapter 4	System Configuration - Describes the structure of the basic AML/J library and optional components available for AML/J library.
Chapter 5	Survey Data - Provides space for planning physical, electrical, and environmental requirements. This information is required by the installation team.

1. AML/J is a trademark of EMASS, Inc. Throughout the remainder of this document, we refer to AML/J library as AML/J

Associated Documents

600337	AML/J Maintenance Guide
600303	AML/J Operator Guide
600304	AML/J Installation Guide
600300	AML Hardware Configuration Information
600302	Product Order Information
600307	AMASS Documentation Set
600308-01	VolServ Documentation Set (for SGI)
600308-02	VolServ Documentation Set (for SUN)
600309	FileServ Documentation Set (for SGI)
600255-01	FileServ Documentation Set (for Convex)
600333	HCC-MVS Documentation Set
600336	DataMgr Documentation Set

Assistance

If questions cannot be solved with the aid of this document or the immediate salesperson, contact the EMASS Technical Assistance Center (ETAC).

- United States 1-800-827-3822 (1-800-TAP-ETAC)
- Germany 0-130-817-021
- United Kingdom 0-800-893-179

2

System Description

Overview 2-3

System Operational Flow 2-3

Hardware Components 2-4
- AMU 2-4
  - Hardware Component 2-5
  - Software Component 2-5
- Handling Unit 2-6
  - Robot 2-7
- Storage Segment 2-8
  - Linear Racks 2-8
- Drive / Control Cabinet 2-9
- Insert / Eject Unit 2-10
- Expansion Unit 2-12
- Drive Unit 2-12

Software Components 2-13
- MVS Support 2-13
  - Host Control Component (HCC) software 2-13
- UNIX Support 2-14
  - AMASS software 2-14
    - DataMgr software 2-14
  - FileServ software 2-15
  - VolServ software 2-16
  - DAS software 2-16
- Archive Management Software Support 2-17

Overview

The EMASS Automated Media Library (AML) is a fully automated, robotic media library that offers an enterprise solution to data management and backup. An example of an AML/J configuration is shown in Figure 2-1.

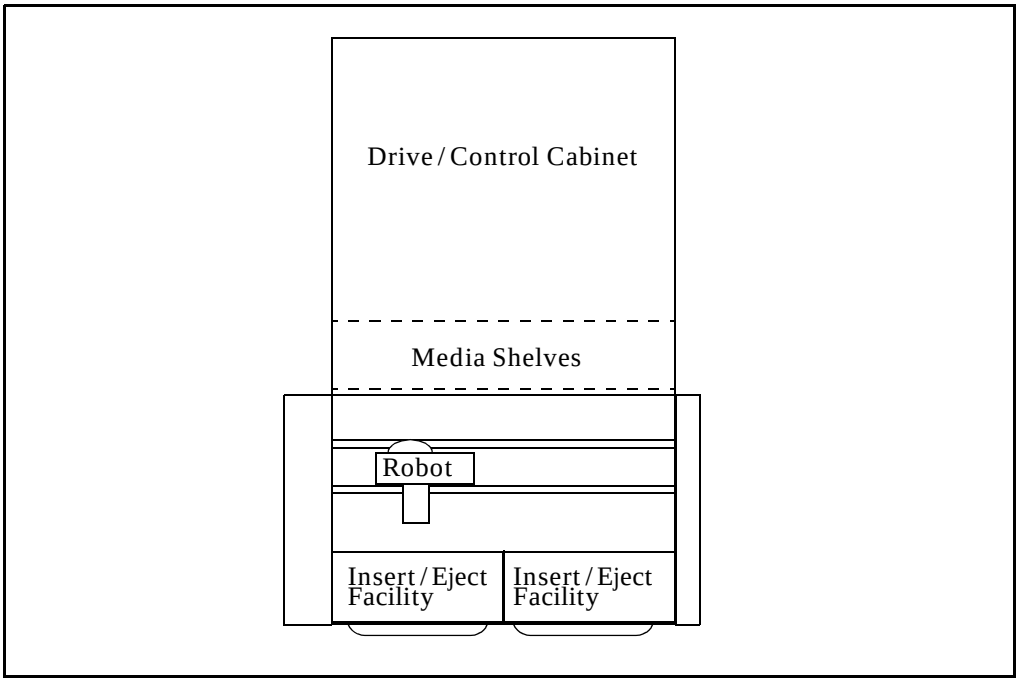

Figure 2-1 AML/J Example Configuration

System Operational Flow

Major system operational components include the following:

- Host
- AMU
- Programmable Multi-Axis Controller (PMAC)

The basic operational philosophy of the AML/J is that the host system is always the master. During normal processing, all commands originate from the host system.

When the host software determines that a media library action is necessary, it creates the appropriate command string and sends it to the AMU for processing. The AMU receives and interprets the host command then issues appropriate commands to the PMAC Controller hardware.

The PMAC Controller hardware provides the movement signals for the Robot. After completing the actions, the PMAC Controller hardware returns status to the AMU. When all PMAC Controller status is returned, the AMU reports an overall result to the host system.

Hardware Components

The main hardware components of the AML/J library are the:

- Handling Unit
- Storage Segment
- Control Cabinet
- I/E unit
- Add-on Modules (optional)
- Modem (optional)

AMU

The AMU is the central interface of the AML/J library. The AMU maintains a copy of the library drives and media information in a relational database. During normal operations, the host computer directs the AML/J library. The AMU hardware and software components operate transparently.

Hardware Component

AMU hardware consists of:

- a computer with a color monitor, a mouse, and a keyboard
- Ethernet Adapter

  — and / or —

- a Token Ring with or without a 3270 emulation card
- PMAC Controller

Software Component

The AMU software components are:

- OS / 2 Operating System
- Communication Manager / 2, TCP / IP
- Database Manager / 2
- AMU Archive Management Software (AMS). For additional information, refer to *Archive Management Software Support* on page 2-17.

Handling Unit

The Handling Unit accomplishes the mechanical access to the physical library storage and the drives via a robot. See Figure 2-2. The Handling Unit executes the PMAC commands and returns status messages.

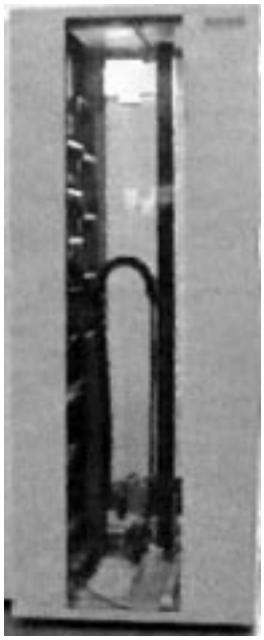

Figure 2-2 Handling Unit

Robot

Media movements are performed by a robot. The robot is equipped with a multimedia gripper and a laser barcode scanner, see Figure 2-3. Typical movements include moving media into and out of the library, storing and retrieving media within the library, mounting and dismounting media from drive units, and scanning media barcode labels.

Components of the robot system include:

- Multimedia gripper.
- Laser barcode scanner
- Robot X Axis platform
- Robot Y Axis column

Figure 2-3 Robot with Storage Bins

Storage Segment

The AML/J product line consists of a family of Linear Racks for storage. Two Linear racks are maximum per base or expansion unit.

Linear Racks

See Figure 2-4. Each Linear Rack contains two segments. The segments consists of:

- rows which are media type dependent
- the number of positions per row (columns) also depends on the media type

Figure 2-4 Linear racks

Drive/Control Cabinet

Movement control signals are provided by the PMAC which resides in the Drive / Control Cabinet. See Figure 2-5. The control cabinet contains:

- AMU
- PMAC
- Power supply
- Drives
- Drive Controller (optional for some drives)

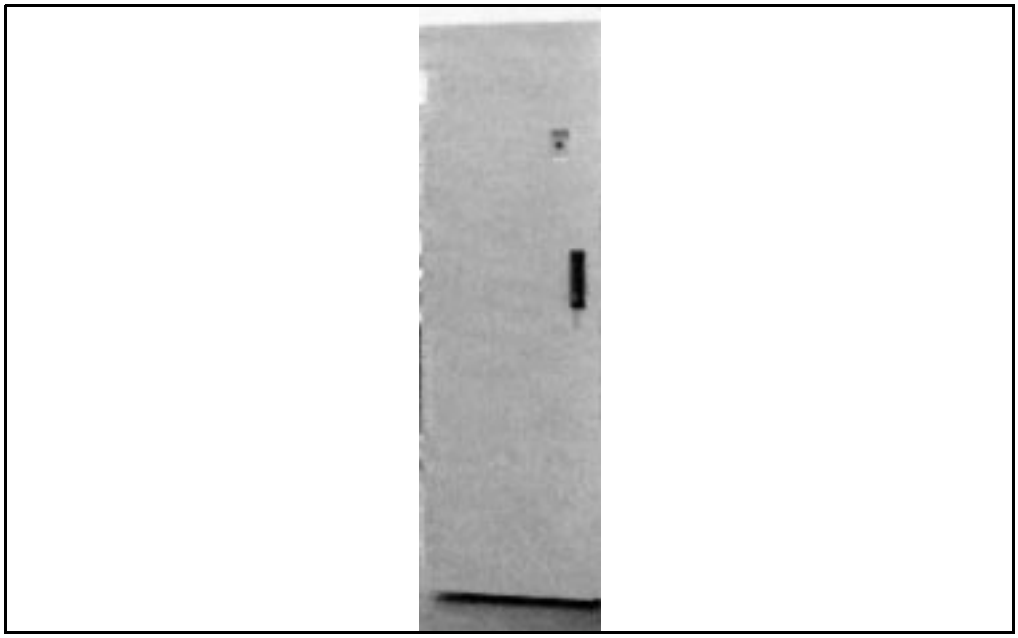

Figure 2-5 Drive / Control Cabinet

Insert/Eject Unit

Media are inserted into and ejected from the AML/J through the I/EF. The media are loaded by an operator into bins.

Two types of IE/F are offered. With the base AML/J Insert/Eject Unit, the media is entered or retrieved through the door. See Figure 2-6. With the IE/F-D, the door must be opened to insert or retrieve media. Refer to Figure 2-7 on page 2-11. The capacity and number of bins are determined by the type of IE/F and media.

The I/EF incorporates a media depository that stores unidentified volumes, defective media, and used cleaning devices.

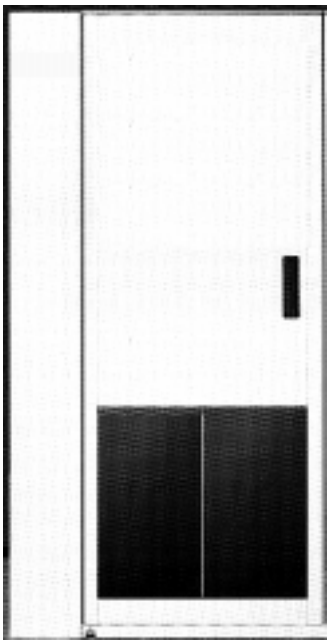

Figure 2-6 Insert/Eject Unit

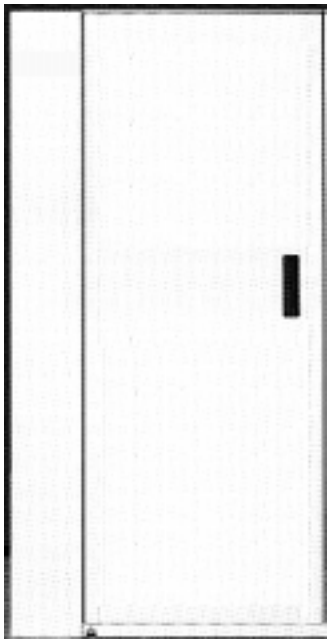

Figure 2-7 Insert / Eject Unit (IE / F-D)

Expansion Unit

Note
The media Expansion Unit does not require a corresponding Drive Expansion Unit.

The Expansion Unit was designed to increase the capacity of the AML/J. Additional Insert/Eject units and additional media are available through the Expansion Unit. See Figure 2-8.

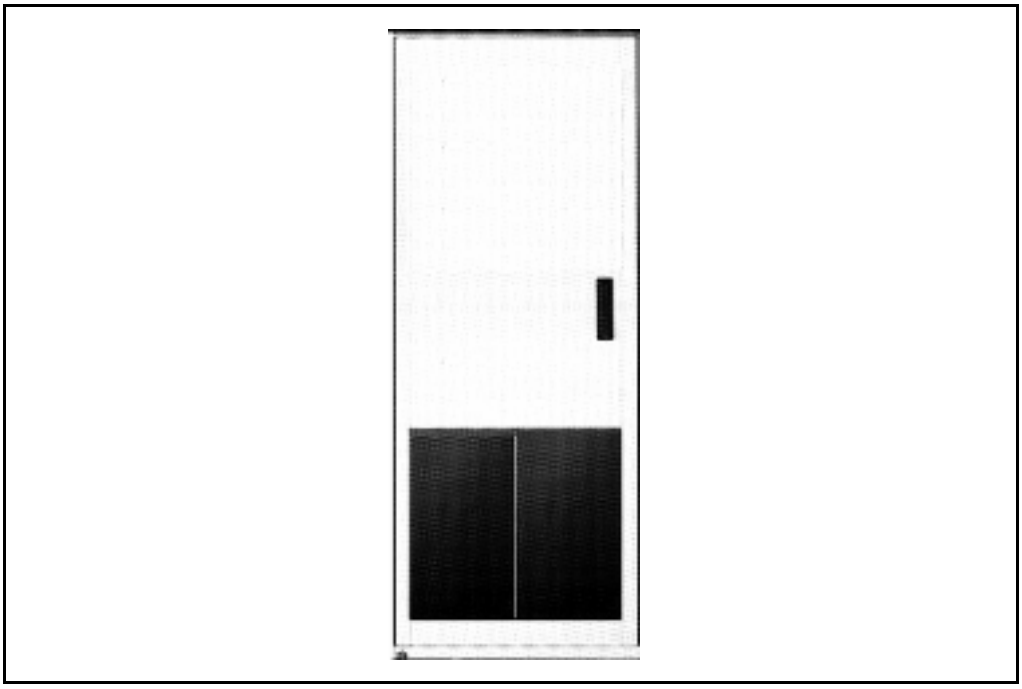

Figure 2-8 Expansion Unit

Drive Unit

Note
For each additional Drive Expansion Unit, a corresponding media Expansion Unit is required.

The Drive Expansion Unit was designed to increase the number of available tape drives in the AML/J.

Software Components

EMASS software organizes and manages the AML/J. This software makes automated data manipulation possible without interfering with the performance of host system. EMASS software automatically receives messages, coordinates tasks, manages and updates the library database, and provides recovery from media errors.

EMASS software can be tailored for many different library configurations. In addition, it can be reconfigured to accommodate an expanding library.

MVS Support

Unlimited MVS system images support is provided by Host Control Component (HCC-MVS) software. This software integrates transparently with MVS S/370, S/390, and Sysplex environments.

Host Control Component (HCC) software

Media functions are routed from the host computer to the AMU AMS software. Media functions supported by HCC software include the following:

- Mount/Keep operations
- Volume insertion/ejection
- Administration of media transport cleaning
- Media label initialization and verification
- Automatic reply to outstanding Write to Operator with Reply (WTOR)
- Scratch media management

Communications functions between the host and AMU AMS software are provided by the following means:

- Local or remote VTAM LU2 (standard 3270 support)
- EXCP standard console communication (local NON-SNA 3x74 control unit)
- LU6.2 (APPC via Token-Ring or Ethernet adapter)

Minimum software requirements to support EMASS software in the MVS environment include the following:

- MVS-SP1.3.6 for JES2
- MVS-SP2.2 for JES3
- SMP/E
- Assembler H
- Standard MVS utilities

UNIX Support

Software solutions to accessing a media libraries are implemented through the UNIX virtual file system layer.

AMASS software

AMASS software presents the AML/J library as on-line direct access mass storage. The AMASS software provides the following features:

- The AML/J library appears a single device
- The AML/J library utilizes a single mount point
- The data on the media appears as a standard UNIX directory with files
- Write or read to media utilizes the same approach as magnetic disk
- Raw cache partitioning provide high performance

Files are accessible across the network through standard communication protocol. The protocols include:

- NFS
- TCP/IP
- RFS
- FTP
- Telnet
- HYPERchannel

Requirements to support AMASS software are platform dependent. Additional detailed information is provided in the part number *600307 AMASS Documentation Set* manuals.

DataMgr software

DataMgr is an integrated, layered, file migration application that requires and operates with AMASS software. DataMgr provides the following features:

- Fully distributed architecture
- File migration from expensive magnetic disk space to inexpensive storage media
- Transparent access to the migrated files
- Convenient access to migrated data during reloads
- Flexible migration policies determine the criteria for file relocation
- File replication across distributed servers
- Multi-tier migration

Additional detailed information is provided in the part number *600336 DataMgr Documentation Set* manuals.

FileServ software

FileServ software balances on-line media with stored library media fro quick access to data. The FileServ software provides the following features:

- The data on the media is accessed via standard UNIX operations using filesystem(s) as tracking points
- Tracks multiple users of the same file to prevent multiple mount actions
- File migration from expensive magnetic disk space to inexpensive storage media
- Transparent access to the migrated files
- Flexible migration policies determine the criteria for file relocation
- Media error are retained as a means to identify suspect defective media

Files are accessible across the centralized or distributed environments through:

- Ethernet
- FDDI
- HYPERchannel
- UltraNet®

Requirements to support FileServ software are platform dependent. Additional detailed information is provided in the part number *600309 FileServ Documentation Set (for SGI)* manuals and the part number *600255-01 FileServ Documentation Set (for Convex)* manuals.

VolServ software

VolServ software handles volume manipulation by class of data and media migration. The Volserv software provides the following features:

- Provides a robotic independent interface to a variety of robotic systems
- Determines on-line or stored media volume location
- Issues manual or robotic commands to retrieve and mount media
- Allows multiple clients to share a single media library
- User defined classes of media share a media library
- Supports multiple media types
- Pools drives to allow drives to be shared among clients
- User defined migration policy allows media to be migrated between on-line and off-line storage

Once a media volume is mounted, the files are accessible across the centralized or distributed environments through:

- Ethernet
- FDDI
- HYPERchannel
- UltraNet®

Requirements to support VolServ software are platform dependent. Additional detailed information is provided in the part number *600308-01 VolServ Documentation Set (for SGI)* and the part number *600308-02 VolServ Documentation Set (for SUN)* manuals.

DAS software

The distributed AML Server (DAS) is a software product with both client and server components. The server software modules support the OS/2 operating system platform and the client software modules support UNIX/AIX operating system platforms. They communicate from the UNIX/AIX clients to the OS/2 DAS server (AMU controller PC) across a TCP/IP connected network.

DAS allows client systems to request actions on selected media within the AML system. DAS performs the following requested actions:

- mounts media in a drive
- dismounts media from a drive
- inserts media into the library
- ejects media from the library

Requirements to support DAS software are platform dependent.

Archive Management Software Support

Operating in the OS/2 environment, AMU software consists of five proprietary operational processes and two proprietary utility processes. The task of each of the seven processes are listed below:

- Communication with host computer, robot control, Quadro Tower control, and Hexa Tower control
- Management of the library catalog using Source Query Language (SQL) database
- Kernel logic converts host commands into control commands
- User interface for operator requests
- Log and trace connection
- Database backup facility
- Remote file transfer

In normal (Automatic) operating mode, the host computer directs the AML/J and the AMU software operates transparently. Usually, commands are only input at the AMU console through the Graphical User Interface (GUI) for direct operator intervention.

3

System Specification

Overview 3-3
Physical Specifications 3-3
Electrical Specifications 3-4
Performance Specifications 3-5
Environmental Specifications 3-5
Regulatory Specifications 3-5
Media Quantity Specification 3-6
Flooring Requirements 3-8
Barcode Requirements 3-8

Overview

This section contains the following information for the AML/J library:

- Physical Specification
- Electrical Specification
- Performance Specification
- Environmental Specification
- Regulatory Specifications
- Media Quantity Specification
- Flooring Requirement
- Barcode Requirement

Physical Specifications

Table 3-1 lists the key physical information for the components of the AML/J library.

Table 3-1 AML/J Component Physical Dimensions

Device	Height	Width	Depth	Maximum Weight	Load
Control Cabinet	78 inches	29 1/8 inches	29 1/4 inches	524 lbs [a]	88 lbs/sq ft
Model J Base Module [b]	78 inches	42 3/4 inches	32 1/2 inches	720 lbs	75 lbs/sq ft
Model J Expansion Module	78 inches	29 1/8 inches	31 1/4 inches	690 lbs	110 lbs/sq ft
Drive Expansion Cabinet	78 inches	29 1/8 inches	29 1/4 inches	850 [c]	144 lbs/sq ft

a. Includes the weight of the heaviest available drive.
b. Cabinet width includes 8 3/4 inch left side non-movable panel and 4 7/8 inch right side movable panel as viewed from the front.
c. See Footnote a.

Electrical Specifications

Table 3-2 lists the key electrical information for the components of the AML/J library.

Table 3-2 AML/J Component Electrical Specifications

Device	Voltage (Single Phase)	kVA	AMP	BTU	Receptacle
Control Cabinet	120 VAC	0.7	6	2135	L5-15R
Model J Base Module	Not Applicable				
Model J Expansion Module	Not Applicable				
Drive Expansion Cabinet	120 VAC	Tape Drive Dependent			L5-15R

Table 3-3 lists the key electrical specifications of the EMASS drive components for the AML/J.

Table 3-3 AML/J Drive Component Electrical Specification

Device	Voltage (Single Phase)	AMP	BTU
EMASS 8490	120 VAC	5	225
EMASS 8590	120 VAC	3	1024
EMASS DLT4002	120 VAC	2	340
EMASS DTF1242	120 VAC	3	598
EMASS ER90	120 VAC	2	1706

Performance Specifications

Table 3-4 lists the key performance information for the AML/J library.

Table 3-4 AML/J Performance Specifications

Avg Actions per Hour	Peak Actions per Hour	Avg Time to Present Media	Max Time to Present Media	Pick Time
300	400	2.5 seconds	6 seconds	3 seconds

Environmental Specifications

Table 3-5 lists the key environmental information for the AML/J library.

Table 3-5 AML/J Environmental Specifications

Temperature	Humidity	Altitude
Minimum to Maximum: 60° - 90° F (16° - 32° C) Recommended: 70° - 75° F (21° - 24° C)	Minimum to Maximum: 15 - 75 percent Recommended: 45 - 65 percent	No limit

Regulatory Specifications

Table 3-6 lists the key safety and electromagnetic regulatory information for the AML/J library.

Table 3-6 AML/J Regulatory Specifications

Safety			EMC - EMI	
North America		Europe	North America	Europe
UL	CSA	TUV Rhineland	FCC, Part 15	CE Mark
UL1950 - ITE	C22.2 #950	EN60950	Class A	Class A

Media Quantity Specification

Table 3-7 lists the quantity of media contained in a single storage segment for the AML/J library. Refer to the document number *600300 AML Hardware Configuration Information* for capacity configuration requirements.

Table 3-7 AML/J Media Segment Quantity

Media	J1[a]	J2[b]	J3[c]	J4[d]	J5[e]	J6[f]	J7[g]	J8[h]	J10[i]	J11[j]	J12[k]	IE/F-E[l]	IE/F-D[m]
Half-Inch Cartridge	110	90	60	40	20	100	70	40	130	30	90	30	260
D-2 small Cartridge	36	24	24	12	12	36	24	12	48	06	30	06	96
St-120 Cassette	48	40	32	16	08	40	32	08	56	08	40	08	112
DLT Cartridge	80	64	48	32	16	64	48	16	96	16	64	16	192
8-MM Cartridge	99	81	63	36	18	81	63	18	117	27	81	27	224
4-MM Cartridge	154	121	88	55	22	121	88	22	176	33	121	33	352

Table 3-7 AML/J Media Segment Quantity (Continued)

Media	J1[a]	J2[b]	J3[c]	J4[d]	J5[e]	J6[f]	J7[g]	J8[h]	J10[i]	J11[j]	J12[k]	IE/F-E[l]	IE/F-D[m]
Optical Disk 512	88	66	55	33	11	66	55	11	99	22	66	22	189
Optical Disk Reflection	96	72	60	36	12	72	60	12	108	24	72	24	216
DTF small Cartridge	56	48	32	24	8	48	32	8	72	16	48	16	144

a. Storage segment above 1 of 6 drive shelves
b. Storage segment above 2 of 6 drive shelves
c. Storage segment above 3 of 6 drive shelves
d. Storage segment above 4 of 6 drive shelves
e. Storage segment above 5 of 6 drive shelves
f. Storage segment above 1 of 4 drive shelves
g. Storage segment above 2 of 4 drive shelves
h. Storage segment above 3 of 4 drive shelves
i. Storage segment for a full height
j. Storage segment next to 1 IE/F-E
k. Storage segment above IE/F - E
l. Storage segment IE/F-E
m. Storage segment IE/F -D

Flooring Requirements

In addition to being dust-free, physically, chemically, and acoustically appropriate, the flooring must meet the insulation resistance specifications. The insulation resistance between the floor surface and earth ground must be 1×10^5 to 1×10^8 ohms to prevent system failure or electrical shock. Sufficient resistance is achieved by using antistatic, nonconducting floor tile with a resistance of 1×10^6 to 1×10^9 ohms. Provide an appropriate connection to the metal portion of the ground plate as necessary to ensure the insulation resistance.

Barcode Requirements

Barcode scanning of individual media labels is accurate if the labels meets the ANSI MH10.8M-1983 standard and other additional requirements. The requirements are:

- ANSI MH10.8M-1983 Standard
    - Number of digits: 6
    - Background reflection: at least 25 percent
    - Print contrast: at least 75 percent
    - Ratio: at least 2.2
    - Module: 250 mm
    - Print tolerance: ± 57 mm
- Additional Requirements
    - Length of the rest zones: 5.25 mm ± 0.25 mm
    - No black marks can be present in the intermediate spaces or rest zones
    - No white areas may be present on the bars
    - Bars should read in a uniform direction. Nonuniform reading directions are feasible in principle, but have a detrimental effect on performance
    - Each label should be applied in the upper right corner of the tape cartridge recess (when oriented vertically)
- Quality Testing

Compliance with these specifications can be checked and documented with the Ergilaser 3000 High Density bar code measuring device that is manufactured by the Laetus Company.

4

System Configuration

Overview 4-3

Base Level 4-3

Media Types 4-4

Drive Types 4-5

Insert / Eject Media Boxes 4-6

Control Cabinet Drive Shelves 4-6

Drive Cabinet Drive Shelves 4-7

Base Unit Media Type Segments 4-8

Expansion Unit Media Type Segments 4-9

Modem 4-10

Software Types 4-11

Host Connection 4-11

Communication Software 4-11

Special Engineering Request 4-11

Customer System Layout 4-12

Overview

This section of the manual solicits the information necessary to configure an AML/J library. Detailed information about drive, media, and storage support for the AML/J is located in the part number *600300 AML Hardware Configuration Information* manual. Order information for the AML/J components is located in the path number *600302 Product Order Information* manual.

Base Level

Check (✔) the desired base level configuration.

_____ Entry Level (2 drive shelves, 1 I/E unit)
_____ Base Module
_____ Base Model + 1 Expansion Unit
_____ Base Model + 2 Expansion Units
_____ Base Model + 3 Expansion Units
_____ Base Model + 4 Expansion Units
_____ Base Model + 5 Expansion Units
_____ Base Model + 6 Expansion Units
_____ Base Model + 7 Expansion Units
_____ Base Model + 8 Expansion Units
_____ Base Model + 9 Expansion Units

Media Types

Enter the quantity of the desired media type (maximum 4).

_____ 3480 / 3490E
_____ EMASS 8490
_____ EMASS 8590
_____ OD512
_____ OD-R
_____ D2S
_____ VHS
_____ DLT
_____ 8mm
_____ 4mm
_____ DTF small
_____ DTF medium
_____ other _____

Drive Types

Enter the quantity of the desired drive types (maximum 4) and if the drive requires a rack mount.

Quantity	Type	Supported (Yes or No)	Rack Mount (Yes or No)
	Fujitsu 3490E	Yes	
	EMASS 8490	Yes	
	IBM 3490 C1A	Yes	
	IBM 3490 C2A	Yes	
	EMASS 8590	Yes	
	MountainGate 2150	Yes	
	ER90 HiPPI	Yes	
	ER90 IPI	Yes	
	Exabyte 8mm	Yes	
	Exabyte 4mm	Yes	
	HP OD	Yes	
	EMASS 4002	Yes	
	OTR	Yes	
	DTF 1242	Yes	
	non-EMASS drive		

Insert/Eject Media Boxes

Enter the quantity of the requested media type handing boxes.

		I/E 1	I/E 2	I/E 3	I/E 4	I/E 5	I/E 6
3480 / 3490E							
EMASS 8490							
EMASS 8590							
OD512							
OD-R							
D2S							
VHS							
DLT							
8mm							
4mm							
other							

Control Cabinet Drive Shelves

Enter the quantity of the Control Cabinet Drive Shelves. Check (✔) if any shelves are for EMASS 8490 (max 3), EMASS 8590 (max 2), ER90 (max 2), DTF 1242 (max 2), or DLT 4002 (max 3).

Drive Shelves	Qty	EMASS 8490		EMASS 8590		ER90		DTF 1242		DLT 4002	
Control Cabinet		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No

Drive Cabinet Drive Shelves

Enter the quantity of Drive Shelves (maximum 6) for the desired number of Drive Cabinet. Check (✔) if any shelves are for EMASS 8490 (max 6), EMASS 8590(max 4), EMASS ER90 (max 4), DTF 1242 (max 4), or DLT 4002 (max 6) type drives.

Drive Shelves	Qty	EMASS 8490		EMASS 8590		ER90		DTF 1242		DLT 4002	
Drive Cabinet 1		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Drive Cabinet 2		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Drive Cabinet 3		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Drive Cabinet 4		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Drive Cabinet 5		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Drive Cabinet 6		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No

Base Unit Media Type Segments

Check (✔) the media type for each segment

Note

There are two segments in each Insert/Eject Facilities. A Segment 5 is available only if one of two IE/F segments is used as a storage segment.

	Base Unit			
	Seg 1	Seg 2	Seg 3	Seg 4
3480/3490E				
EMASS 8490				
EMASS 8590				
OD512				
OD-R				
D2S				
VHS				
DLT				
8mm				
4mm				
other				

Expansion Unit Media Type Segments

Note

There are two segments in each Insert/Eject Facilities. A Segment 5 is available only if one of two IE/F segments is used as a storage segment.

Check (✔) the media type for each segment

	Expansion Unit 1				Expansion Unit 2			
	Seg 1	Seg 2	Seg 3	Seg 4	Seg 1	Seg 2	Seg 3	Seg 4
3480/3490E								
EMASS 8490								
EMASS 8590								
OD512								
OD-R								
D2S								
VHS								
DLT								
8mm								
4mm								
other								

	Expansion Unit 3				Expansion Unit 4			
	Seg 1	Seg 2	Seg 3	Seg 4	Seg 1	Seg 2	Seg 3	Seg 4
3480/3490E								
EMASS 8490								
EMASS 8590								
OD512								
OD-R								
D2S								
VHS								
DLT								
8mm								
4mm								
other								

	Expansion Unit 5				Expansion Unit 6			
	Seg 1	Seg 2	Seg 3	Seg 4	Seg 1	Seg 2	Seg 3	Seg 4
3480 / 3490E								
EMASS 8490								
EMASS 8590								
OD512								
OD-R								
D2S								
VHS								
DLT								
8mm								
4mm								
other								

	Expansion Unit 7				Expansion Unit 8			
	Seg 1	Seg 2	Seg 3	Seg 4	Seg 1	Seg 2	Seg 3	Seg 4
3480 / 3490E								
EMASS 8490								
EMASS 8590								
OD512								
OD-R								
D2S								
VHS								
DLT								
8mm								
4mm								
other								

Modem

Check (✔) if modem is desired.

_____ Yes _____ No

Software Types

Check (✔) the requested type of software.

_____ HCC-MVS
_____ AMASS
_____ AMASS with DataMgr
_____ FileServ
_____ VolServ
_____ DAS
_____ Other _____

Host Connection

Check (✔) the requested type of connection.

_____ Ethernet
_____ Token Ring
_____ Coax
_____ Special _____

Communication Software

Check (✔) if Remote Access communication software is desired (CM/2 and TCP/IP are included with the system).

_____ Remote Access

Special Engineering Request

Check (✔) any desired special engineering requirements.

_____ None
_____ Hardware
_____ Software

Customer System Layout

Sketch the customer's system layout or cut and paste from the examples in Figure 4-3 on page 4-13. Figure 4-2 on page 4-13 represents a configuration example.

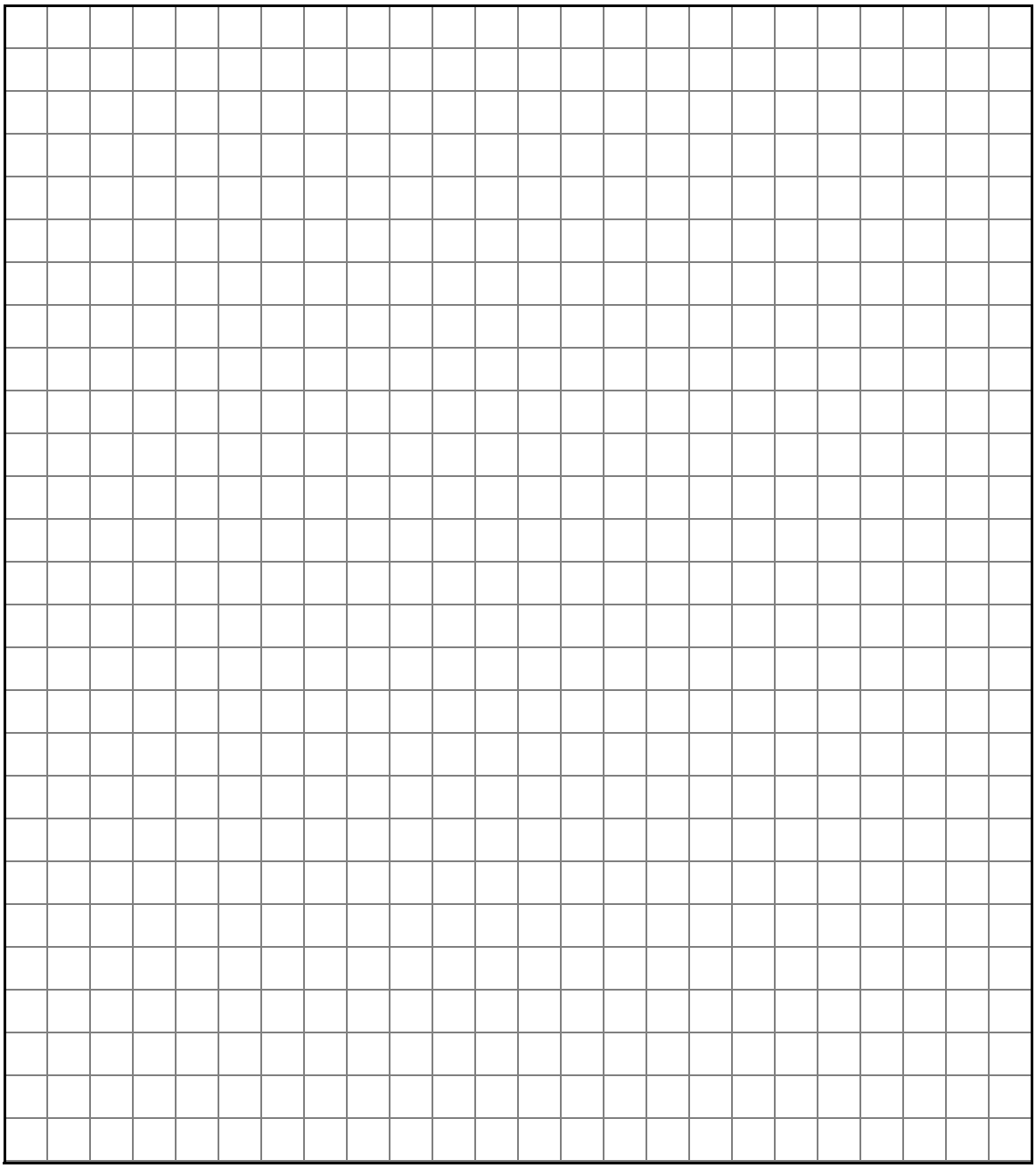

Figure 4-1 Customer AML/J Configuration Layout Scale: 1/4" = 1'

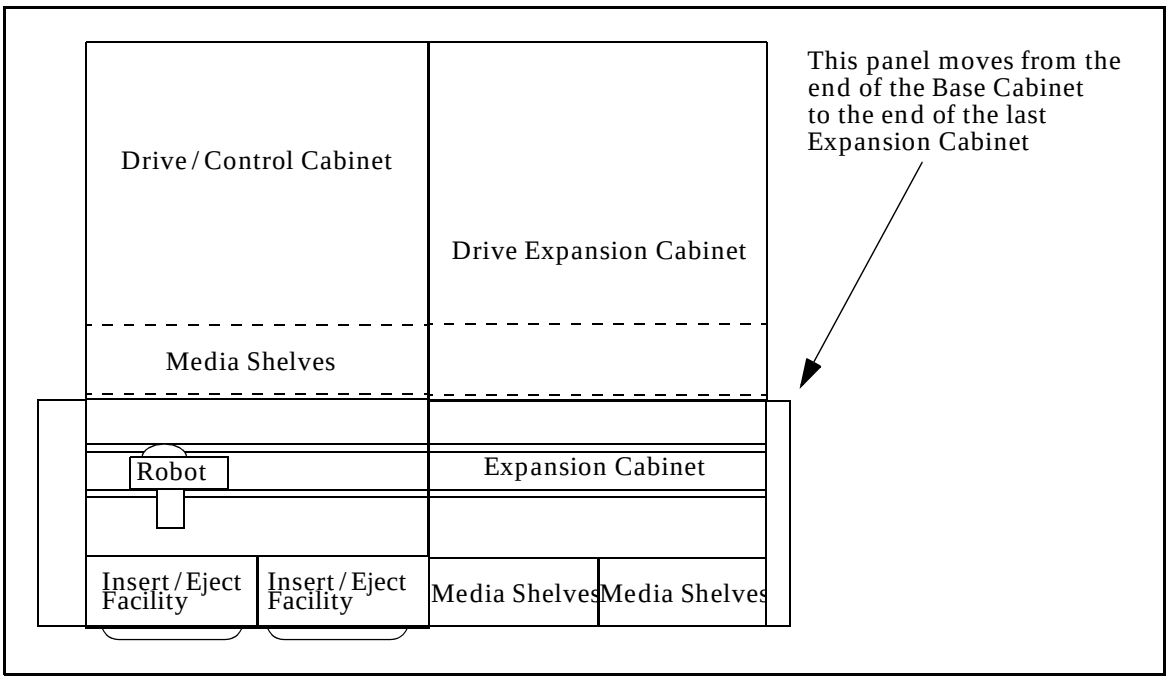

Figure 4-2 Example AML / J ConfigurationConfiguration

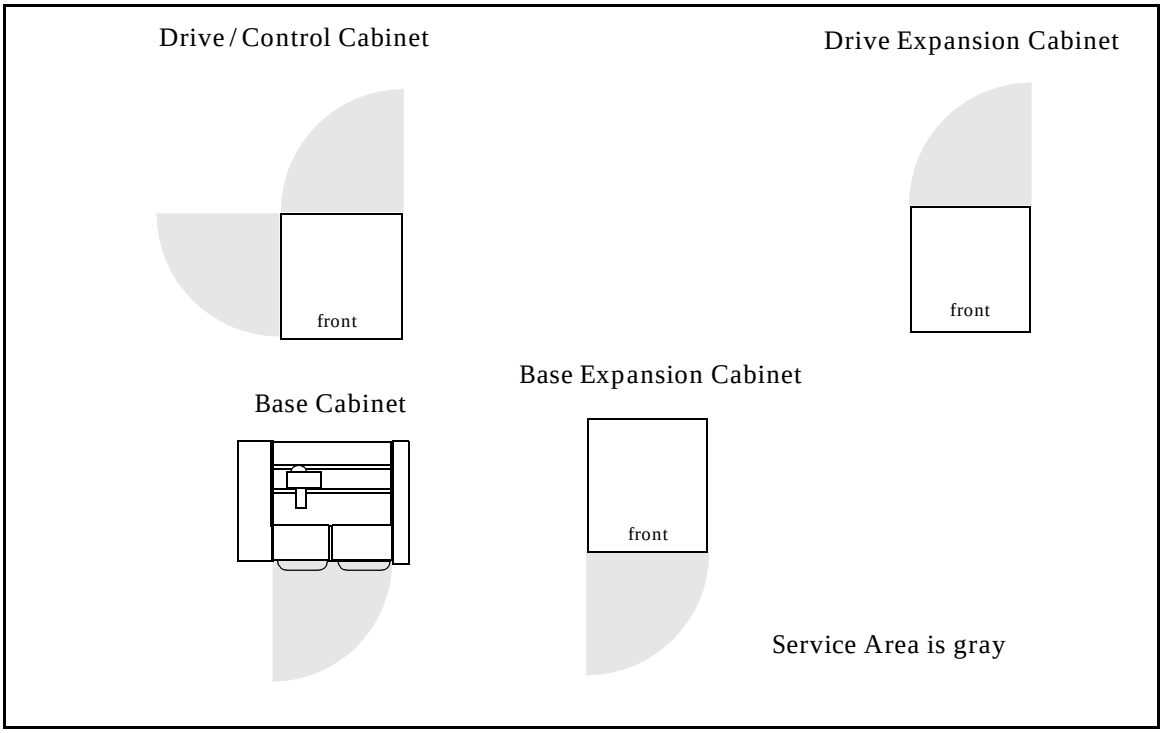

Figure 4-3 Cutout Examples

Scale: 1 / 4" = 1’

5

Survey Data

Overview 5-3

General Information 5-3

Physical Environment 5-4

Customer Room Layout 5-6

Site Preparation 5-7
- Power Circuits 5-7
- Telephone Connection 5-7
  - Customer Building Layout 5-8
  - Access Conditions 5-9
- Additional Comments 5-12

Overview

This section solicits pertinent information about the delivery site. Record all requested general information.

General Information

Place any additional information in *Additional Comments* on page 5-12.

Customer Name: _____

_____

Mailing Address: _____

_____

_____

_____

_____

Sales Contact: _____

Telephone: _____

EMASS Sales Rep: _____

EMASS Account Mgr: _____

Shipping Address: _____

_____

_____

Installation Contact: _____

_____

Telephone: _____

Target Installation Date: _____

Target Operational Date: _____

Physical Environment

Place any additional information in *Additional Comments* on page 5-12.

Room Dimension: _____

_____

_____

Ceiling Height _____

_____

_____

Ceiling Projection _____

_____

_____

Floor Type _____

_____

_____

Floor Load Capacity

Fire Protection

Customer Room Layout

Sketch the approximate measurements of the AML/J library room and any obstructions.

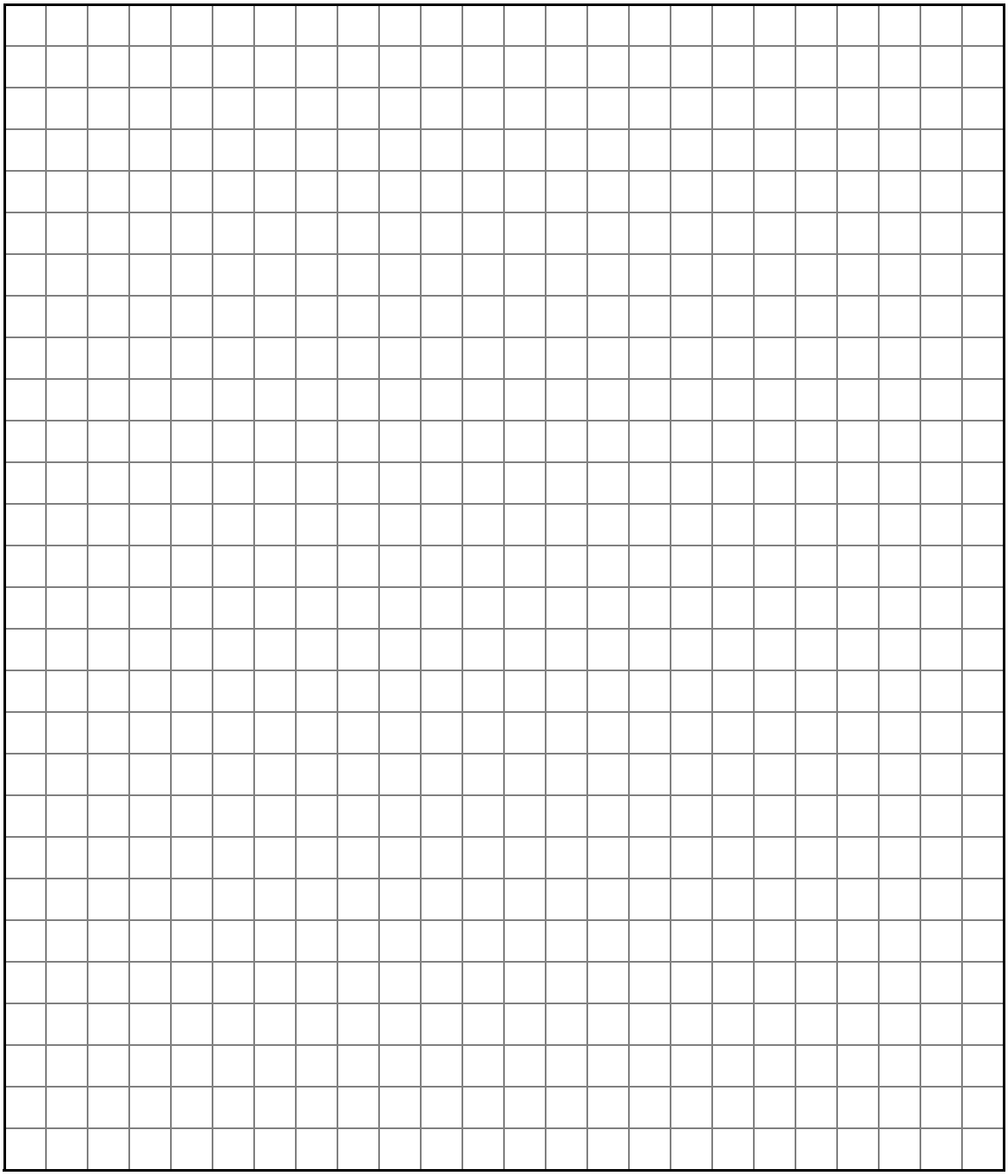

Figure 5-1 Room Layout

Scale: 1/4" = 1’

Site Preparation

The following customer supplied circuits are necessary for the proper installation and operation of the AML/J library.

Power Circuits

Refer to *Electrical Specifications* on page 3-4

Note
This information must be conveyed to the customer to enable site preparation before installation.

120 VAC, single phase, 15A, circuit terminated in a NEMA L5-15R receptacle.

Telephone Connection

Refer to *Modem* on page 4-10.

Note
This information must be conveyed to the customer to enable site preparation before installation.

Standard B1 analog telephone line terminating in an RJ-11 connector. Each AMU requires a separate line for the diagnostic modem.

Customer Building Layout

Sketch the building layout that indicates the route from the loading dock to equipment final destination. Indicate obstructions.

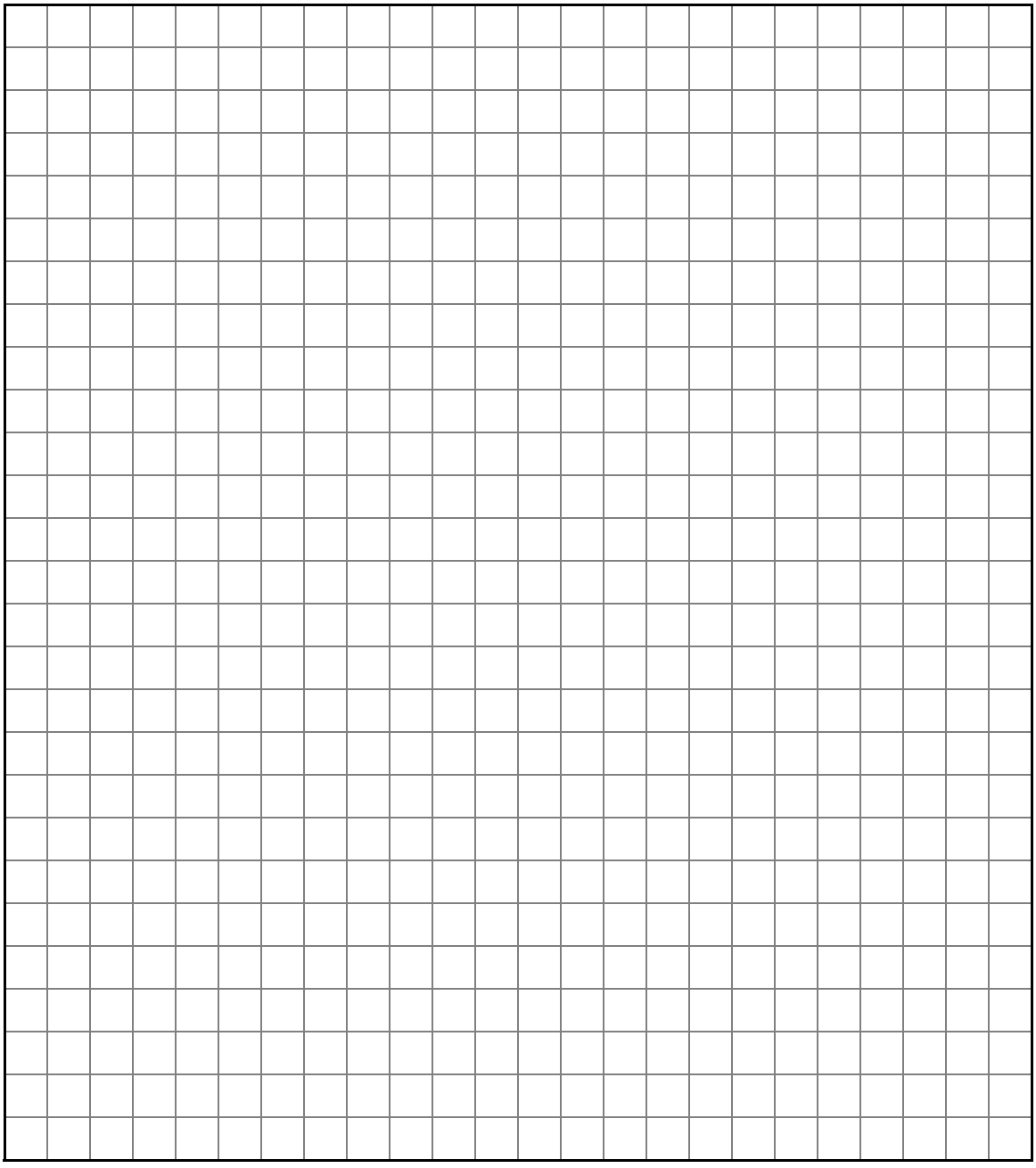

Figure 5-2 Building Scale Grid = 1/4", No Scale

Access Conditions

Access to AML / J library room (elevator, stairs, door widths, etc.):

Dimensions and Location of Smallest Door or Opening:

Loading Dock Specifications (dock height, type of ramps, weather protection, etc.):

Semitrailer Accessibility (Y or N): _____

Preferred / Required Local Carrier Company:

Where Can Trailer Be Left for Staging?

Availability of Material Handling Equipment:

Location for Uncrating:

Preferred Time of Day for Unloading and Moving Materials:

Off Hours / Weekends Accessibility for Installation Team:

Procedure for Obtaining Building Passes:

Procedure for Scheduling the Elevator, Loading Dock, etc.:

Waste Disposal Considerations:

Bargaining Unit Considerations:

Other Considerations:

Additional Comments

Record any additional information from other pages. For reference purposes, note the page number with the information. Add and number additional sheets as necessary.