DEC
STD
126
REV. A

PACKAGED SYS. DOC. STRUCTURE

TITLE: PACKAGED SYSTEMS DOCUMENTATION STRUCTURE

ABSTRACT: This standard describes the minimum engineering drawings and documents that are required to document packaged systems.

DATE	ECO #	ORIGINATOR	APPROVED	REV	SEC	PAGES
12-Apr-79	----	R.Nelson/ J.Beatty	Engineering Committee	A	-	1-33

Size	Code	Number	Rev.
A	DS	EL00126-00	A

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1.0 INTRODUCTION

1.1 PURPOSE

The standard establishes the documentation structure required for Digital's packaged systems. The two-level structure described by this standard defines the minimum documentation required to build and support a packaged system in Manufacturing. The documentation requirements are intended to minimize the number of engineering drawings in a document package and to eliminate the duplication of information among document packages.

1.2 SCOPE

The requirements of this standard apply to all packaged systems that are developed and manufactured by Digital. The documentation package specified by the requirements of this standard is primarily intended to meet the needs of organizations involved in packaged systems assembly.

These packaged systems are defined and identified by a Unified Numbering Code part number (2-5-2) that is defined by DEC STD 012, Section 3, Packaged Systems Identification.

This standard does not specify the contents of Field Maintenance Print Sets for packaged systems. Refer to DEC STD 117, Field Maintenance Print Sets.

1.3 RESPONSIBILITIES

1.3.1 Design Engineering

Design Engineers are responsible for specifying and reviewing packaged systems documentation for completeness and accuracy, and for assuring that packaged system engineering documentation is not released prior to part number approval and entry in the Option/Module list.

Design Engineers may produce packaged systems documentation without assistance from an Engineering Services site Design/Drafting group, provided that the documentation meets the requirements stated in this standard.

1.3.2 Engineering Services Design/Drafting

Engineering Services site Design/Drafting groups shall assist Design Engineers with the preparation of packaged systems documentation, when required. In addition, these groups are responsible for releasing packaged systems documentation, in accordance with the requirements of this standard.

These groups are also responsible for assuring that packaged systems engineering drawings and documents are not released, unless the related packaged system part numbers are listed in the Master Parts File (MPF) maintained in the Engineering Product Library System (EPLS).

1.3.3 Manfacturing Engineering

Manufacturing Engineers are responsible for reviewing packaged system documentation, prior to release, to assure that the information provided is sufficient to build and support these products in Manufacturing.

1.3.4 Site Design Libraries

The Design Library at each site is responsible for determining the acceptability of engineering documentation for release through the Engineering Documentation System.

1.3.5 Packaged Systems Engineering

This standard is maintained by Packaged Systems Engineering, ML3-4/E81, DTN 223-8528. Direct questions regarding the requirements of this standard, or requests for additional information to that organization.

1.4 REFERENCED STANDARDS

DEC STD 012, Section 3	Packaged System Identification
DEC STD 013	Engineering Drawing Formats, Decals and Forms
DEC STD 024	Drawing Directory
DEC STD 025 (proposed)	Parts Lists
DEC STD 117	Field Maintenance Print Sets
DEC STD 119, Sections 1, 2	Digital Product Safety

Copies of the referenced standards can be obtained from Digital Standards Administration, ML5-2/E56, DTN 223-2954.

2.0 GENERAL REQUIREMENTS

Packaged systems are developed around a basic configuration, or kernel, which is a group of options that form the base for a wide variety of packaged systems. The kernel is not a stand alone system. Each specific packaged system configuration is derived by choosing a basic kernel and adding appropriate system elements to the package. Examples of options that are commonly included in the kernel are the:

Central processor
System device (e.g. disk storage etc.)
Load device (e.g. magtape, floppy disk, etc.)
Cabinetry
etc.

Examples of systems elements that are added to form a complete packaged system include the:

Console terminal
Operating system software
Software support
Memory or additional memory
etc.

To be effective and economical, the documentation for a packaged system is structured to reference the basic system configuration documentation and add the variable system data required to document a unique packaged system. Thus, the complete documentation for a packaged system is structured in two levels and consists of:

System-level documentation (calling out the kernel)
Kernel-level documentation

Figure 1 illustrates the two-level structure of packaged system documentation.

NOTE

In Figure 1, and subsequent examples, some of the sample drawings have been produced on a word processor. Although the word processor is a useful tool for producing certain kinds of engineering drawings, such as system arrangement drawings, the use of a word processor is not required.

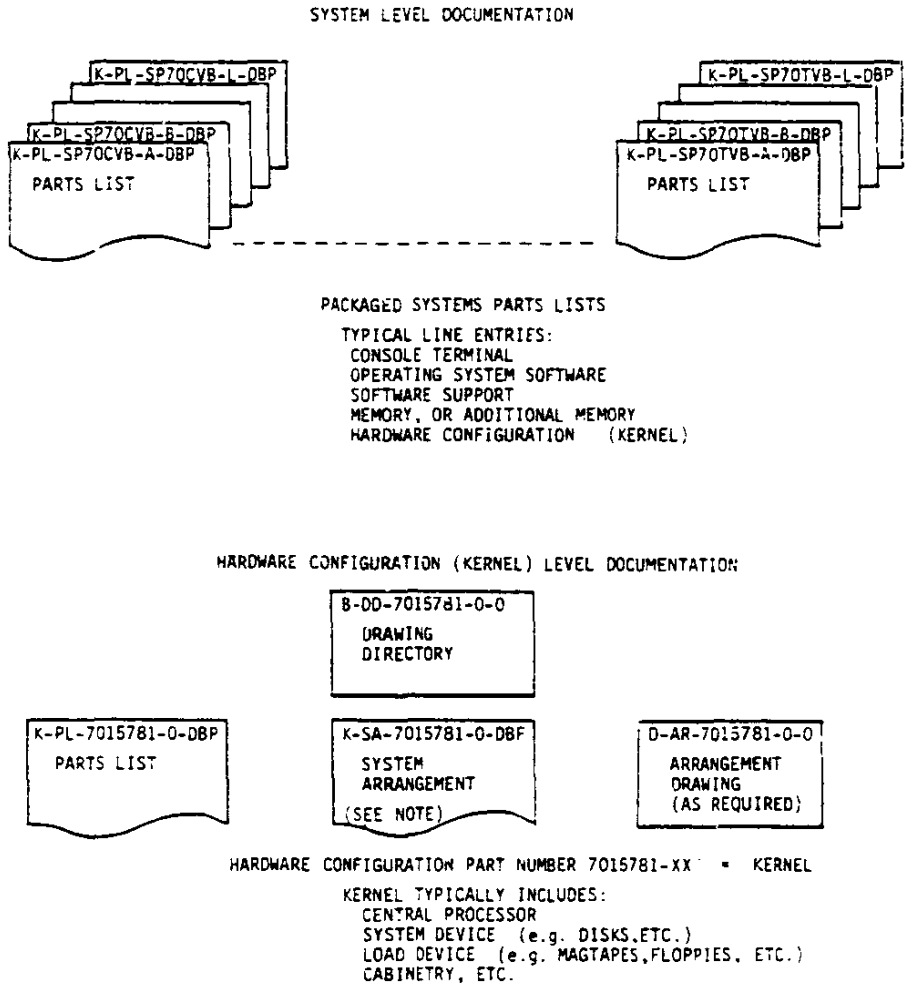

Figure 1 Packaged System Documentation Structure Example

2.1 PACKAGED SYSTEM-LEVEL DOCUMENTATION

At the packaged system level, documentation consists of packaged system parts lists. Each parts list describes all the offered variations of a standard packaged system, as identified by the UNC (Unified Number Code) packaged system part numbers. The method of assigning part numbers is described in DEC STD 012, Section 3, Packaged System Identification. Packaged system parts list requirements are described in detail in paragraph 3.0 of this standard.

Assembly details for the packaged system parts are included in the kernel-level documentation.

2.2 KERNEL-LEVEL DOCUMENTATION

The kernel-level documentation applies to the options that are included in the kernel. For documentation and configuration control purposes, a part number and part description are assigned. Several variations of the kernel may be created, depending upon the quantity and variety of packaged systems that are offered.

Kernel-level documentation consists of four essential elements. They are:

a. Drawing Directory (DD)
b. Parts List (PL)
c. System Arrangement Drawing (SA) or Unit Assembly Drawing (UA)
d. Arrangement Drawing (AR), when required

Kernel-level documentation requirements are described in detail in paragraph 4.0 of this standard.

Documentation for the basic hardware configuration that makes up the kernel may exist in the form of a unit assembly drawing (UA) and related engineering documentation. When such documentation meets the requirements specified for kernel-level documentation (paragraph 4.0), that documentation shall be used. For example, the kernel for the SR-VXLLA-LX series of packaged systems is the 11T03-L, and the 11T03-L unit assembly drawing E-UA-11T03-L-0 meets the requirements and is an acceptable substitute for a systems arrangement (SA) document and an arrangement (AR) drawing.

If it is not clear whether existing documentation satisfies packaged systems documentation requirements, the responsible engineer shall consult with Packaged Systems Engineering for direction.

3.0 PACKAGED SYSTEMS PARTS LISTS

A standard parts list is required for each packaged system. The sample packaged system parts lists, shown in Figures 2 and 3 are in matrix automated parts list format, described in DEC STD 025, Parts Lists.

AUTOMATED BY PRTLST.3F(7) P A R T S L I S T SHEET A1 OF A1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANITY PER VARIATION LA	LD	LK	LN
1	1	K-SA-7015781-0-DBF	7015781-02	HARDWARE CONFIG. PACKAGE # 39	1	-	1	-
2	2	K-SA-7015781-0-DBF	7015781-03	HARDWARE CONFIG. PACKAGE # 39	-	1	-	1
3	3	E-UA-MK11-0-0	MK11-BE	UNIT ASSY MK11	1	1	1	1
4	4	E-UA-LA36-0-0	LA36-CE	30 CPS WRITER WITH LK03A 110V 60	1	-	1	-
5	5	E-UA-LA36-0-0	LA36-CJ	30 CPS WRITER WITH LK03A 220V 50	-	1	-	1
6	6	D-IA-7008360-0-0	7008360-01	CABLE ASSY	1	1	1	1
7	7	C-IA-7008519-0-0	7008519-06	INTERFACE CABLE	1	1	1	1
8	8	A-PL-H7005-0-0	H7005	SEE 12-14613-00	1	1	1	1
9	9		QJ821-AD	DSM-11 SOFTWARE (FULLY - SUPPORT	1	1	-	-
10	10		QJ821-DZ	DSM-11, SOFTWARE (USE - ONLY)	-	-	1	1

REVISION HISTORY			BASIC PART NO: SP70CVB										
ENG.	ECO NUMBER	REV	SECTION A OF A	DRN: W. HAVENER	DATE: 01-DEC-78		d	i	g	i	t	a	l
	INIT	A	SECTION. VARIATION INDEX [A] LA,LD,LK,LN	CHK'D: P. BLOGGETT	DATE: 01-DEC-78	TITLE	PARTS LIST						
			[B]	DES. ENG.: D. BURNS	DATE: 01-DEC-78		PACKAGED SYSTEM SP70CVB						
			[C]	RESP.ENG.: D. BURNS	DATE: 01-DEC-78		DOCUMENT NUMBER						
			[D]			SIZE	CODE	NUMBER				REV.	
			[E]	MFG.ENG.: H. CORREIA	DATE: 01-DEC-78	K	PL	SP70CVB-L-DBF				A	
			[F]	ASSEMBLY NUMBER: K-SA-7015781-0-DBF								EDIT # 6	

Figure 2 Sample Parts List for Packaged System SP-70CVB-L

AUTOMATED BY PRTLST.3F(7) P A R T S L I S T SHEET A1 OF A1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION LA	LD	LK	LN
1	1	K-SA-7015781-0-DBF	7015781-00	HARDWARE CONFIG. PACKAGE # 39	1	-	1	-
2	2	K-SA-7015781-0-DBF	7015781-01	HARDWARE CONFIG. PACKAGE # 39	-	1	-	1
3	3	E-UA-MK11-0-0	MK11-BE	UNIT ASSY MK11	1	1	1	1
4	4	E-UA-LA36-0-0	LA36-CE	30 CPS WRITER WITH LK03A 110V 60	1	-	1	-
5	5	E-UA-LA36-0-0	LA36-CJ	30 CPS WRITER WITH LK03A 220V 50	-	1	-	1
6	6	D-IA-7008360-0-0	7008360-01	CABLE ASSY	1	1	1	1
7	7	C-IA-7008519-0-0	7008519-06	INTERFACE CABLE	1	1	1	1
8	8	A-PL-H7005-0-0	H7005	SEE 12-14613-00	1	1	1	1
9	9		QJ821-AD	DSM-11 SOFTWARE (FULLY - SUPPORT	1	1	-	-
10	10		QJ821-DZ	DSM-11, SOFTWARE (USE - ONLY)	-	-	1	1

REVISION HISTORY			BASIC PART NO: SP70IVB											
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: W. HAVENER	DATE: 01-DEC-78		d	i	g	i	t	a	l	
	INIT	A	SECTION, VARIATION INDEX (A) LA,LD,LK,LN	CHK'D: P. PLOGGETT	DATE: 01-DEC-78	TITLE	PARTS LIST							
			(B)	DES. ENG.: D. BURNS	DATE: 01-DEC-78		PACKAGED SYSTEM SP70IVB							
			(C)				DOCUMENT NUMBER							
			(D)	RESP.ENG.: D. BURNS	DATE: 01-DEC-78	SIZE	CODE	NUMBER					REV.	
			(E)	REG.ENG.: G. CORNEIA	DATE: 01-DEC-78	K	PL	SP70IVB-L-DBP					A	
			(F)	ASSEMBLY NUMBER: K-SA-7015781-0-DBF									EDIT # 7	

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Figure 3 Sample Parts List for Packaged System SP-70TVB-L

4.0 KERNEL-LEVEL DOCUMENTATION

The kernel-level documentation set includes a drawing directory (DD), a parts list (PL), and a kernel system arrangement document (SA). An arrangement drawing (AR) may be required, depending upon the level of detailed information required to assemble the kernel hardware.

It is common practice to create several variations of the kernel, usually to provide different combinations of system and load devices. The kernel-level documentation set must support all variations that are referred to by the higher-level packaged systems parts lists.

4.1 DRAWING DIRECTORY

A complete description of drawing directory requirements is provided in DEC STD 024, Drawing Directory. A sample drawing directory is shown in Figure 4.

For the kernel drawing directory, the list of drawings is limited to those that have been created specifically for the kernel. For example:

K-PL-7015781-0-DBP	Parts Lists
K-SA-7015781-0-DBF	System Arrangement
D-AR-7015781-0-0	Arrangement Drawing (if required)

4.2 PARTS LISTS

A parts list is required for the kernel. The sample kernel parts list shown in Figure 5 is an extended matrix format, as described in DEC STD 025, Parts Lists.

The kernel parts list will include every variation of the kernel that has been created to support a specific packaged system. The parts list may include any documented option or part. Parts typically included are the basic central processor, cabinetry, load devices, system devices, cables, and any unique hardware required by the packaged systems supported by the kernel.

The kernel parts list and each packaged system parts list that calls out the kernel make up the complete parts list for each specific packaged system. The kernel parts list must include every part or option in the packaged system that is not included on the packaged system parts lists. Any part or option that appears on the packaged system parts list must not be repeated on the kernel parts list.

4.3 KERNEL SYSTEM ARRANGEMENT DRAWING

The kernel system arrangement (SA) drawing is a multi-page drawing made up of tables and diagrams that show the physical arrangement of the kernel options, power and signal interconnections, and any detailed configuration instructions required to support kernel and packaged systems assembly. The format of the kernel system arrangement document is not specified by this standard. Requirements will vary, depending upon the kernel. Figure 6 is a sample system arrangement drawing that includes the typical categories of information required to adequately support a kernel.

NOTE

It is good practice to keep the system arrangement drawing general in content. This can be accomplished by referring to other documents (such as specifications) that exist for detailed information on specific options. This practice limits the risk of having to ECO the system arrangement drawing each time a change is made to one of the specific options.

Because packaged system-level documentation consists only of parts lists, the reference and assembly information for parts on the packaged systems parts lists are included in the kernel system arrangement drawing. This information should also be general in nature, so that changes to items on a packaged systems parts list will not usually affect the kernel system arrangement drawing.

As a minimum requirement, the system arrangement drawing shall include the following:

a. Cover sheet
b. Cabinetry arrangement
c. Module utilization
d. Power and signal cabling
e. Option configuration, installation information, and other essential assembly information
f. Product safety data

These categories of information, are described in the following paragraphs.

4.3.1 Cover Sheet

Refer to sheet 1 of the system arrangement example shown in Figure 6. The cover sheet provides a part variation legend of the kernel components, listing the part numbers and part descriptions. The cover sheet also provides an ECO history of the kernel and lists the contents of the multi-page system arrangement drawing.

4.3.2 Cabinet Arrangement

Refer to sheets 2 and 3 of Figure 6. The cabinet arrangements are drawn to show front and rear views of the cabinetry that indicate the location and positioning of components. When the kernel is a multi-cabinet configuration, the cabinet arrangement drawing shall show the physical location of each cabinet with respect to the others.

4.3.3 Module Utilization

Refer to sheets 4, 5, and 6 of Figure 6. The module utilization drawings show the layout and arrangement of the modules installed in the mounting backplanes. The drawings also show the unfilled backplane slots that are assigned or reserved for specific purposes.

The module utilization drawing shall show the following usage categories:

a. Kernel Modules - all modules supplied as part of the kernel.

b. Packaged System Modules - all modules added, as part of the packaged system.

When groups of these modules are physically installed in adjacent backplane slots, they may be specified generically. For example, "VAX CPU", "Memory", etc.

Module slots not specifically assigned can be used for customer's system expansion.

4.3.4 Power and Signal Cabling Information

Refer to sheets 7 and 8 of Figure 6. Cabling information required to support the kernel is provided in tabular format. The information shall include cable part numbers, purpose, and connection points. The cabling information sheets should also provide any reference information required or helpful in cable routing and installation.

NOTE

If diagrams are required to show cable routing, they should be provided in a separate arrangement drawing (AR).

4.3.5 Option Configuration/Installation Instructions

Refer to sheet 9 of Figure 6. This part of the system arrangement drawing includes set-up instructions for any special option configurations, such as bus address assignment, priority interrupt levels, vector addresses, or special modes of operation that may be required.

4.3.6 Product Safety Data

List the documentation, for each cabinet of the kernal, that shows compliance with corporate product safety standards. The documentation to be referenced should provide data for the following product safety criteria:

a. Stability of the cabinetry, center of gravity
b. Temperature rise
c. Leakage current
d. Total current rating and input voltage rating
e. Unit identification

Design requirements and test methods for these criteria are provided in DEC STD 119, Digital Product Safety, Sections 1 and 2.

Waivers of this requirement can only be granted by Corporate Product Safety.

4.3.7 Notes

Refer to sheet 10 of Figure 6. This part of the system arrangement drawing shall be used to list notes that apply to specific parts of the drawing, notes that indicate how to interpret data on the drawing, and references to other documentation that provides essential information.

4.4 ARRANGEMENT DRAWING (AR)

An arrangement drawing shall be provided when one is needed to adequately provide information required to assemble the kernel. The Manufacturing Engineer responsible for final assembly and testing of a kernel shall be involved in determining if an arrangement drawing is required in addition to the systems arrangement (SA) drawing.

The arrangement drawing may be a multi-sheet drawing and may include additional information that supports packaged systems assembly, as well as kernel assembly. The amount of detail to be included will depend upon each kernel and the amount of detail provided on the related SA drawing.

The arrangement drawing is used to show the cabinetry in perspective, using cut-away and exploded view illustrating techniques to provide essential mechanical detail. The arrangement drawing may be particularly useful in depicting unusual cable routing requirements.

Arrangement drawings need not be drawn to scale. Details of kernel cabinet arrangement that are included on the system arrangement drawing (SA) need not be duplicated on the arrangement (AR) drawing.

Figure 7 is a sample of an arrangement drawing that is provided to illustrate the type of information that may be provided on an arrangement drawing.

NOTE

The sample arrangement drawing shown in Figure 7 is for a DEC Data System and is not related in any way to the typical packaged systems and kernel shown in Figures 1 through 6.

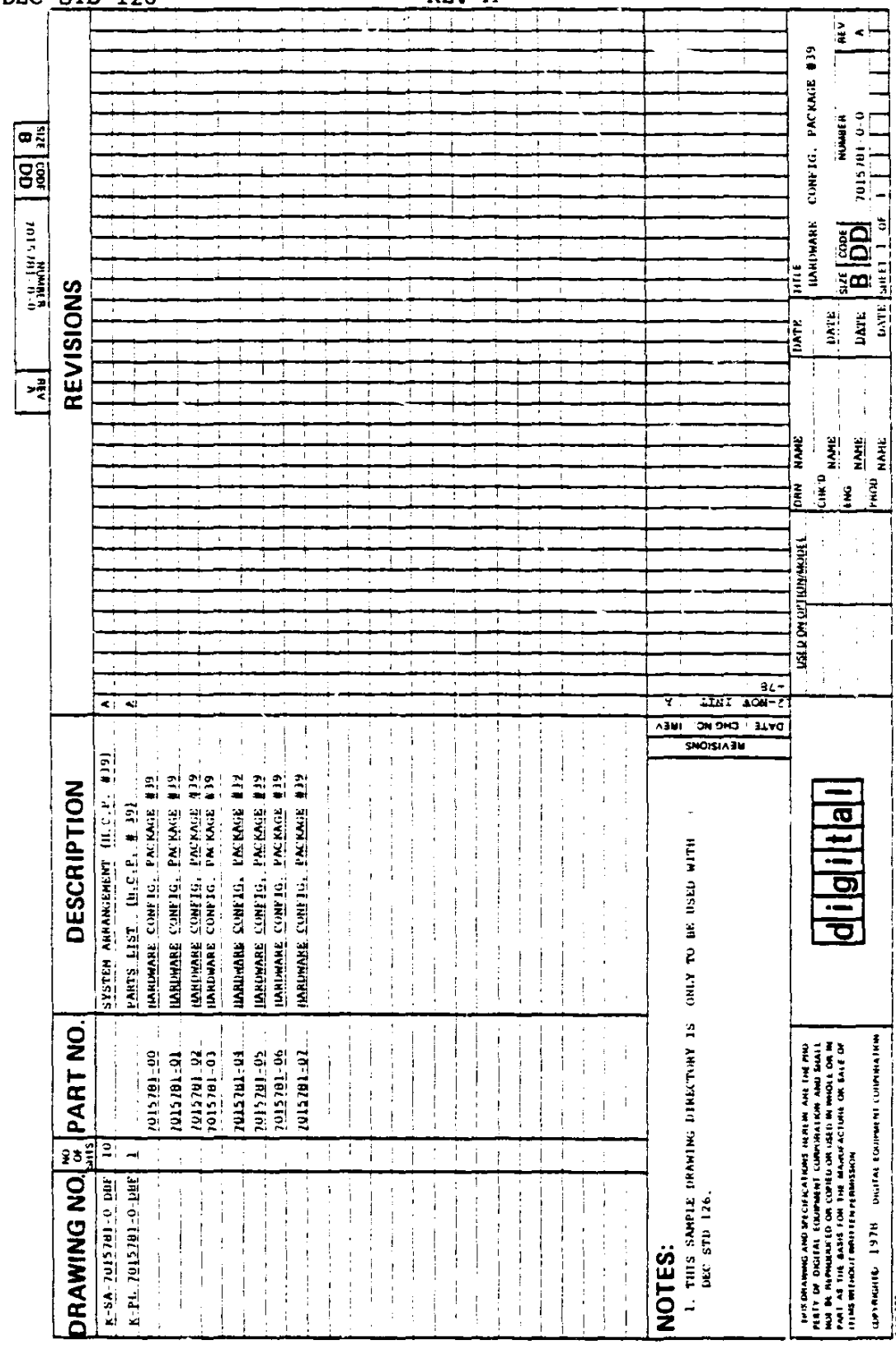

Figure 4 Sample Drawing Directory for Haruware Configuration #39 (Kernel)

AUTOMATED BY PRTLST.3F(7) P A R T S L I S T SHEET A1 OF A1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANITY PER VARIATION 00	01	02	03	04	05	06	07
1	1	E-UA-11/70-0-0	11/70-MP	11/70-MK EXCEPT 1 H9506-A INSTEA	1	-	1	-	1	-	1	-
2	2	E-UA-11/70-0-0	11/70-MR	11/70-ML EXCEPT 1 H9506-A INSTEA	-	1	-	1	-	1	-	1
3	3	E-UA-RWP06-A-0	RWP06-AA	(RWP06) MOVING HEAD DISK ASSY	-	-	1	-	-	-	1	-
4	4	E-UA-RWP06-A-0	RWP06-AB	(RWP06) MOVING HEAD DISK ASSY	-	-	-	1	-	-	-	1
5	5	E-UA-RWH03-0-0	RWH03-AH	RH03 DISK DRIVE	1	-	-	-	1	-	-	-
6	6	E-UA-RWH03-0-0	RWH03-AJ	RH03 DISK DRIVE	-	1	-	-	-	1	-	-
7	7	E-UA-TE16-0-0	TE16-AA	TM02-FA AND TE16-AE, 115V 60HZ	1	-	1	-	-	-	-	-
8	8	E-UA-TE16-0-0	TE16-AD	TM02-FB AND TE16-AJ, 230V 50HZ	-	1	-	1	-	-	-	-
9	9	E-UA-TU45-0-0	TU45-AA	DUAL DENSITY MASTER TU45 TM02-FE	-	-	-	-	1	-	1	-
10	10	E-UA-TU45-0-0	TU45-AB	DUAL DENSITY MASTER TU45 TM02-FF	-	-	-	-	-	1	-	1
11	11	D-UA-RH70-0-0	RH70-A	MASSBUS CONTROLLER	1	1	1	1	1	1	1	1
12	12	E-UA-H9602-C-0	H9602-CC	H9602-C SINGLE BAY HIBOY CAB	1	-	1	-	1	-	1	-
13	13	E-UA-H9602-C-0	H9602-CD	H9602-C SINGLE BAY HIBOY CAB	-	1	-	1	-	1	-	1
14	14	E-UA-BA11-K-0	BA11-KE	10.5" BOX/H745 H745 115V	1	-	1	-	1	-	1	-
15	15	E-UA-BA11-K-0	BA11-KF	10.5" BOX/H745 H745 230V	-	1	-	1	-	1	-	1
16	16	A-PL-DD11-D-0	DD11-DK	BACK PLANE ASSY	1	1	1	1	1	1	1	1
17	17	D-UA-BC11A-0-0	BC11A-15	CABLE ASSY PDP-11 H919 M929	1	1	1	1	1	1	1	1
18	18	D-UA-BC06R-0-0	BC06R-12	CABLE I/O 12FT (MJ11)	3	3	3	3	3	3	3	3
19	19	C-IA-7008288-0-0	7008288-BF	CABLE ASSY PDP-11	2	2	2	2	2	2	2	2
20	20	D-IA-7414167-0-0	7414167-0	PLATE CONN MTG	1	1	1	1	1	1	1	1
21	21	E-AD-7013688-0-0	7013688-0	ROD, INTERLOCK HIBOX	1	1	1	1	1	1	1	1

REVISION HISTORY	BASIC PART NO: 7015781	DRN: P. TESLA	DATE: 20-NOV-78										
ENG CO NUMBER	REVISECTION A OF A			TITLE	PARTS LIST								
INIT	A SECTION. VARIATION INDEXCHK'D: P. TESLA		DATE: 20-NOV-78										
	(A) 00,01,02,03,04,05, 06,07			HARDWARE CONFIG. PACKAGE #39									
	(B)	DES.ENG.: D. BURNS	DATE: 20-NOV-78										
	(C)												
		RESP.ENG.: D. BURNS	DATE: 20-NOV-78	DOCUMENT NUMBER									
	(D)												
				SIZE CODE/NUMBER			REV						
	(E)	MFG.ENG.: H. CORREIA	DATE: 20-NOV-78	K	PL	7015781-0-DBP	A						
	(F)	ASSEMBLY NUMBER: K-SA-7015781-0-DBF					EDIT # 3						

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Figure 5 Sample Parts List for Hardware Configuration #39 (Kernel)

SYSTEM ARRANGEMENT

TABLE OF CONTENTS

SHEET NO.(S)	DESCRIPTION
2,3	CABINET ARRANGEMENT
4-6	MODULE UTILIZATION
7	AC CABLING
8	SIGNAL CABLING
9	OPTION INFORMATION
10	NOTES

DESCRIPTION OF VARIATIONS

CPU TYPE 11/70

VARIATION	POWER	MEM SIZE (BYTES)	MASS STORAGE SYS. DEV.	MASS STORAGE LOAD DEV.	NOTE NO.(S)
7015781-00	120V 60	MOS 123K	RM03	TE16	
7015781-01	240V 50	MOS 128K	RM03	TE16	
7015781-02	120V 60	MOS 128K	RP06	TE16	
7015781-03	240V 50	MOS 128K	RP06	TE16	
7015781-04	120V 60	MOS 128K	RM03	TU45	
7015781-05	240V 50	MOS 128K	RM03	TU45	
7015781-06	120V 60	MOS 128K	RP06	TU45	
7015781-07	240V 50	MOS 128K	RP06	TU45	

REVISION HISTORY

ENG	ECO NUMBER	REVISED	ECO NUMBER	REV
INIT		A		

DRN: R.A.NELSON | DATE: 20-NOV-78
CHK'D: DAVID BURNS | DATE: 22-NOV-78
DES.ENG.: R.A.NELSON | DATE: 24-NOV-78
RESP.ENG.: R.A.NELSON | DATE: 24-NOV-78
MFG.ENG.: HENRY CORREIA | DATE: 14-DEC-78
FLD SER.: DOUGLAS HENDERSON | DATE: 14-DEC-78

SIZE	CODE	NUMBER	REV.
K	SA	7015781-0-DDP	A

TITLE: SYSTEM ARRANGEMENT
HARDWARE CONFIG. PACKAGE #39
DOCUMENT NUMBER
SHEET 1 OF 10

Figure 6 Sample System Arrangement Drawing (SA), Table of Contents (Sheet 1 of 10)

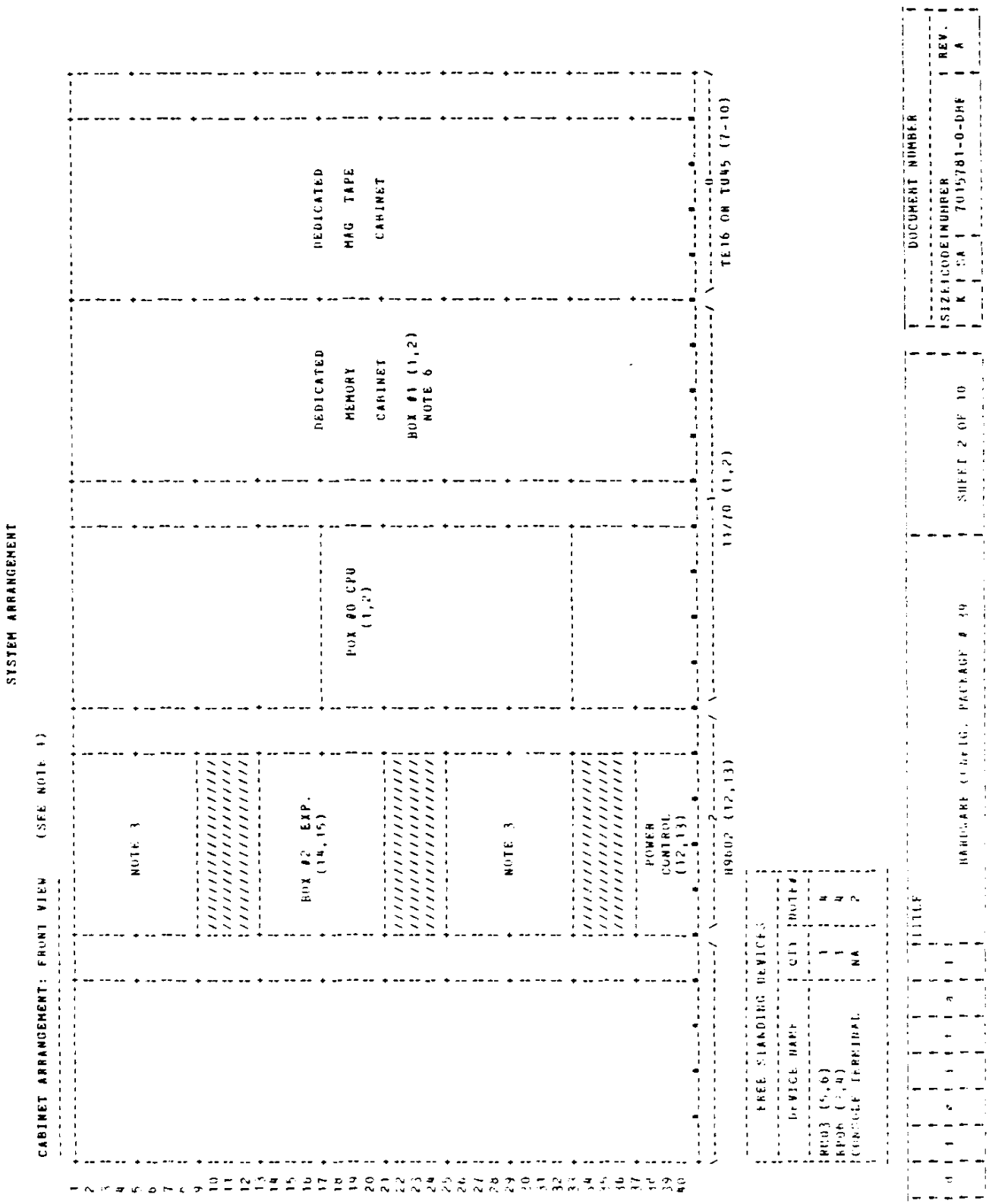

Figure 6 Sample System Arrangement Drawing (SA), Cabinet Arrangement, Front View (Sheet 2 of 10)

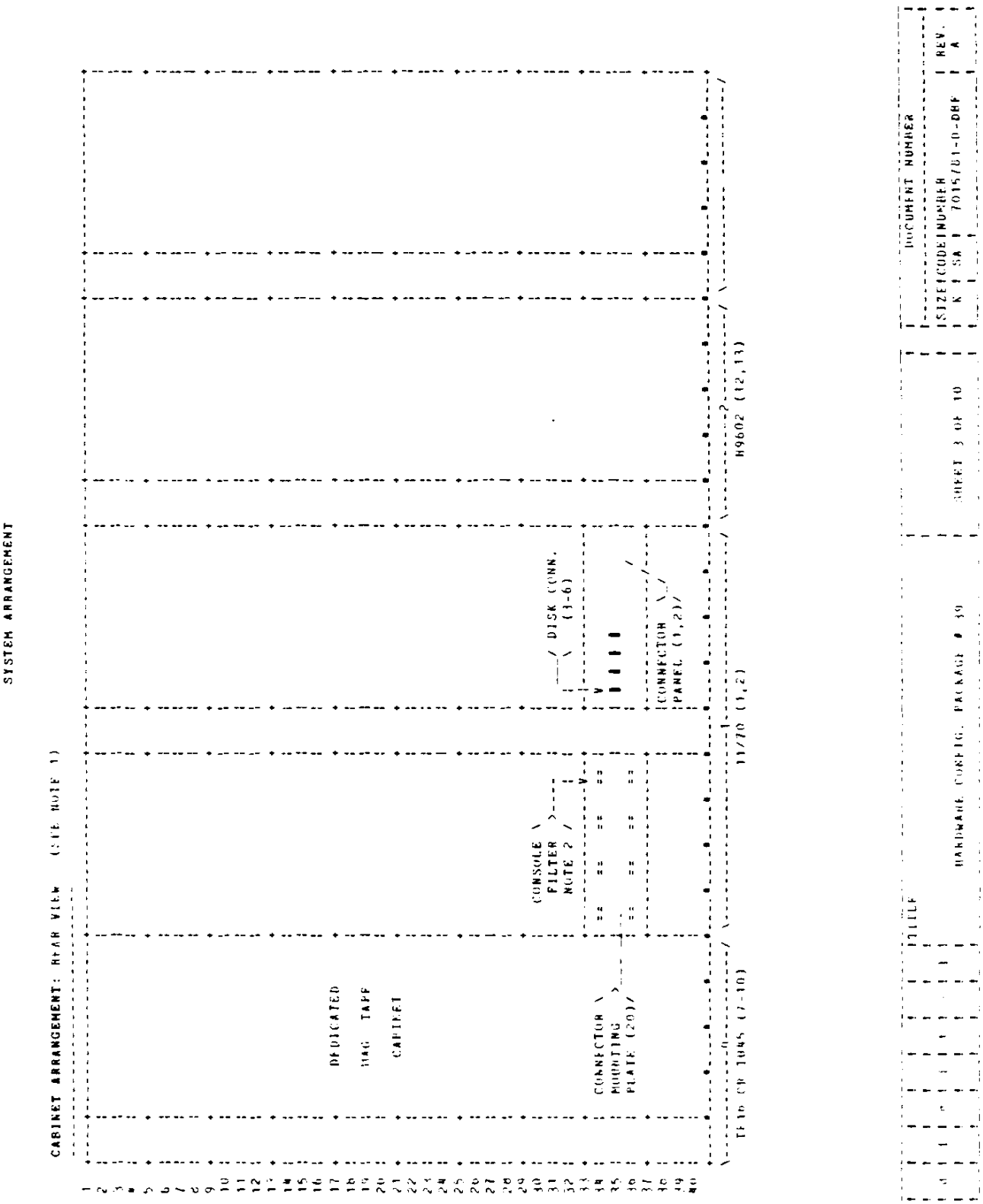

Figure 6 Sample System Arrangement Drawing (SA), Cabinet Arrangement, Rear View (Sheet 3 of 10)

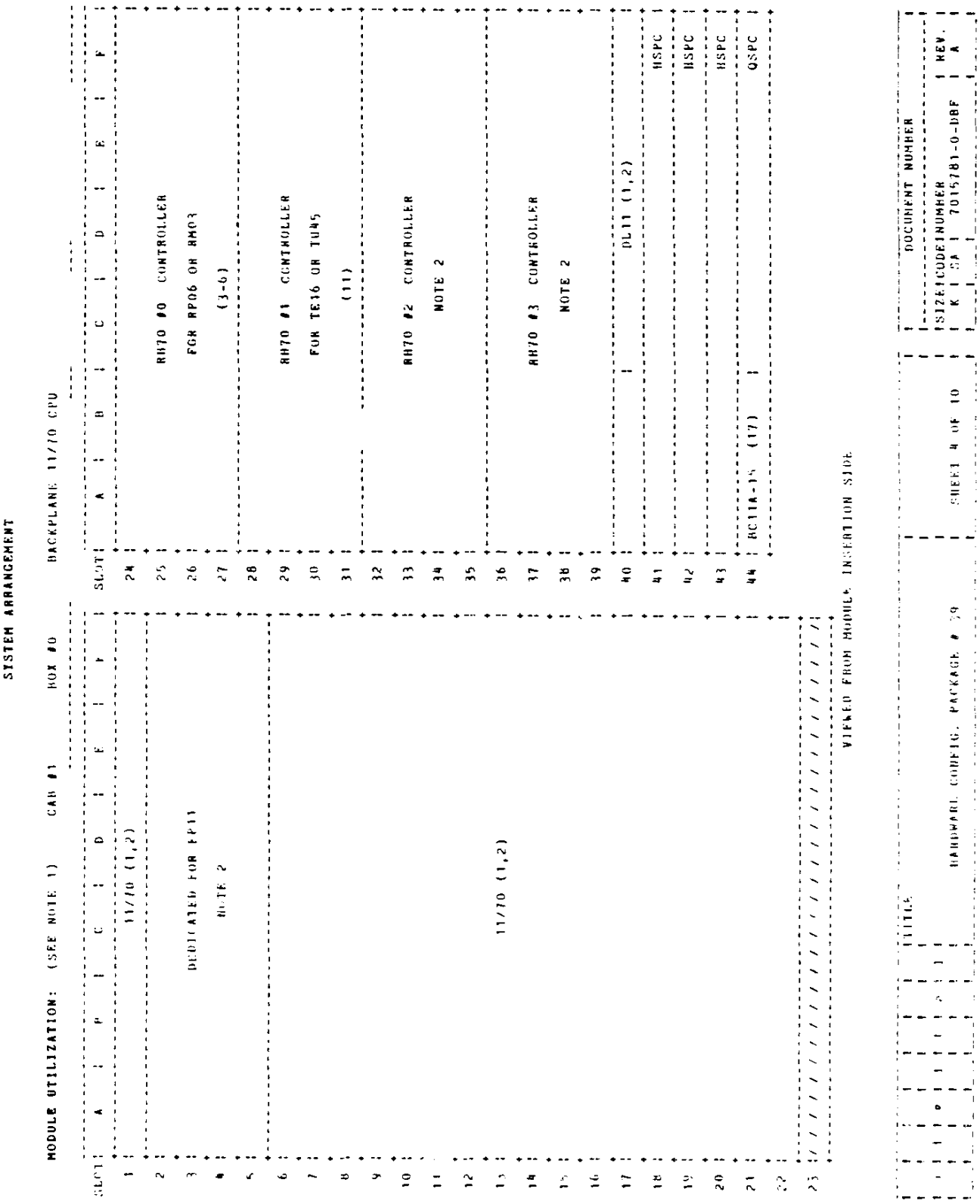

Figure 6 Sample System Arrangement Drawing (SA), Module Utilization (Sheet 4 of 10)

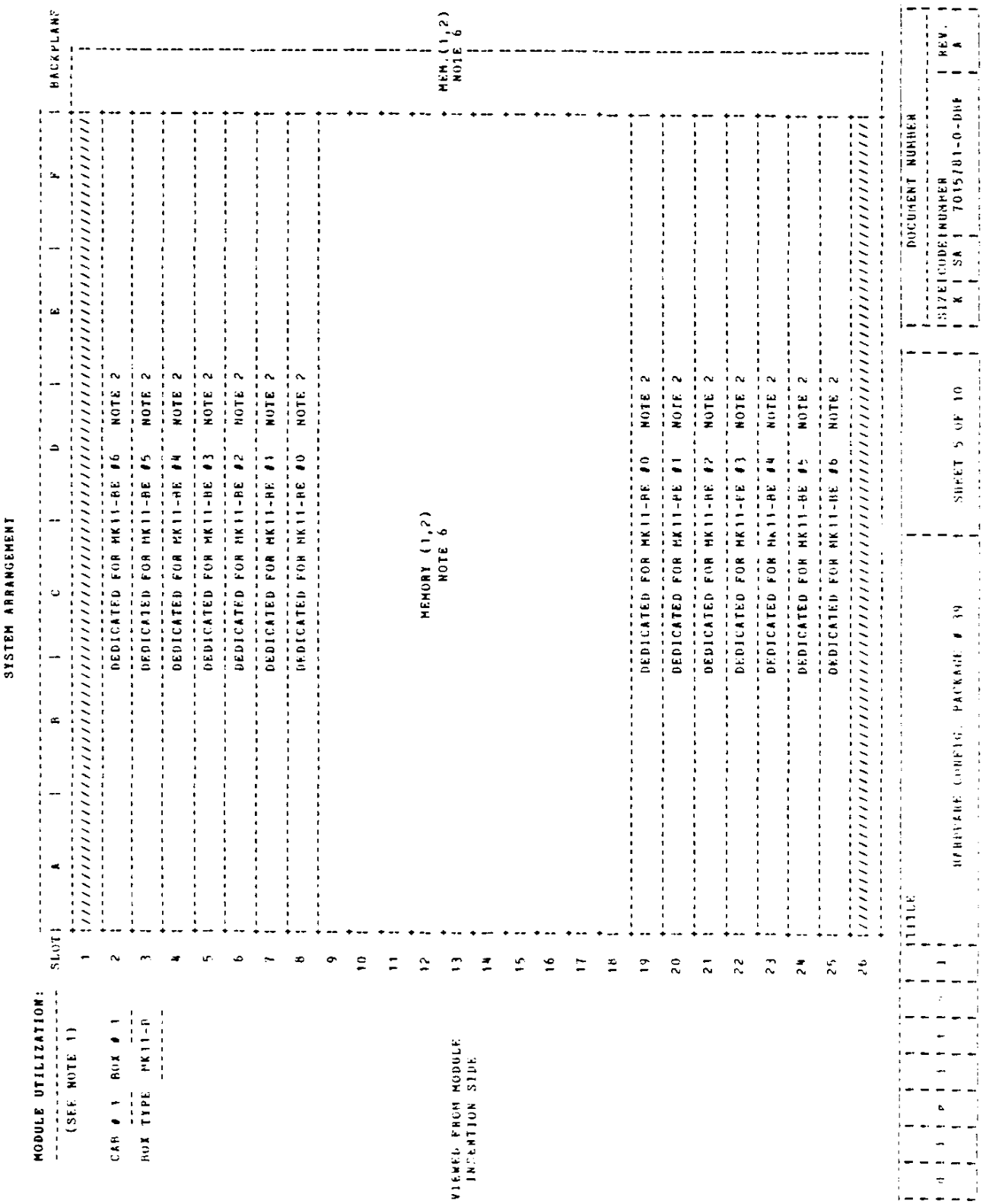

Figure 6 Sample System Arrangement Drawing (SA), Module Utilization (Sheet 5 of 10)

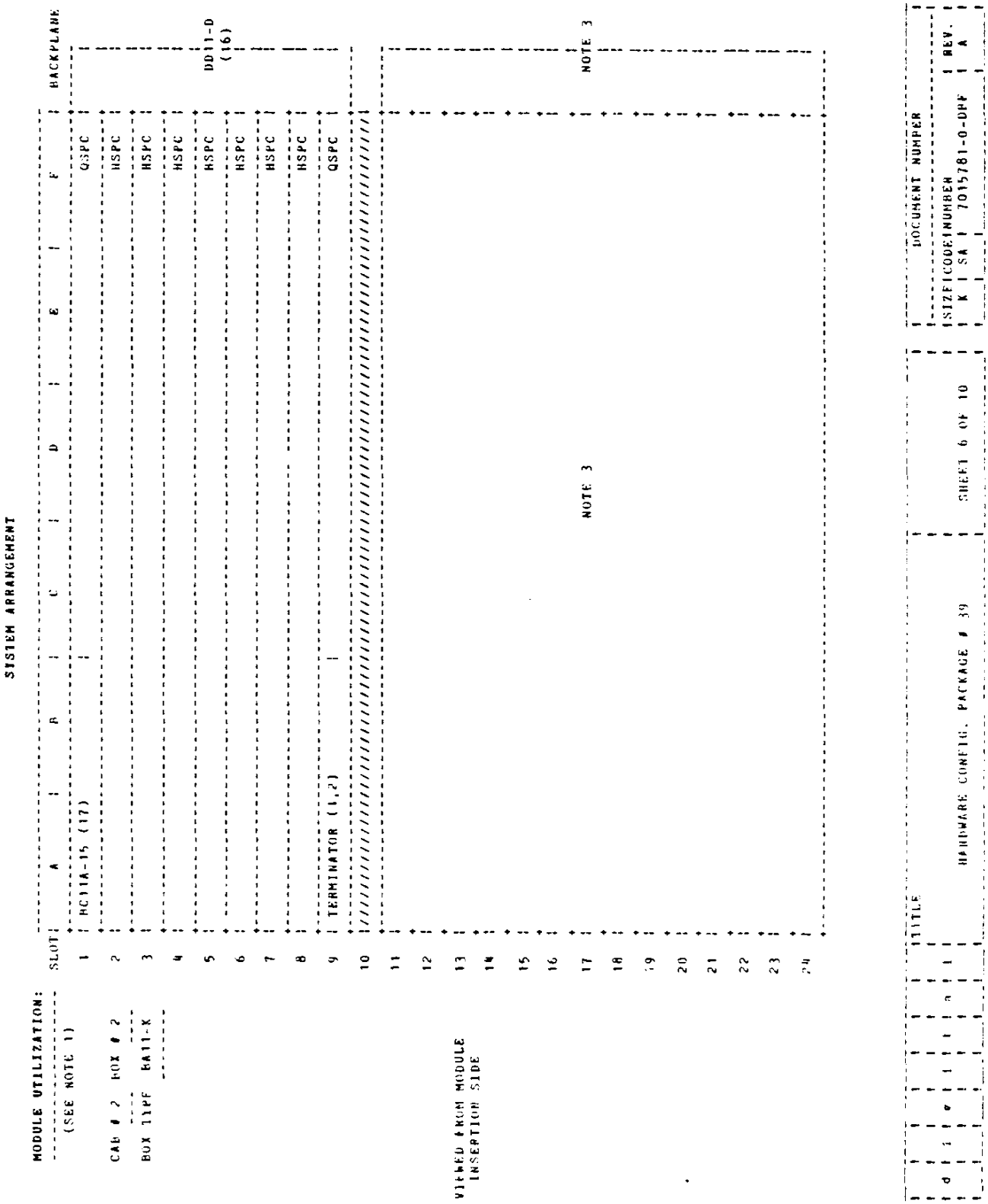

Figure 6 Sample System Arrangement Drawing (SA), Module Utilization (Sheet 6 of 10)

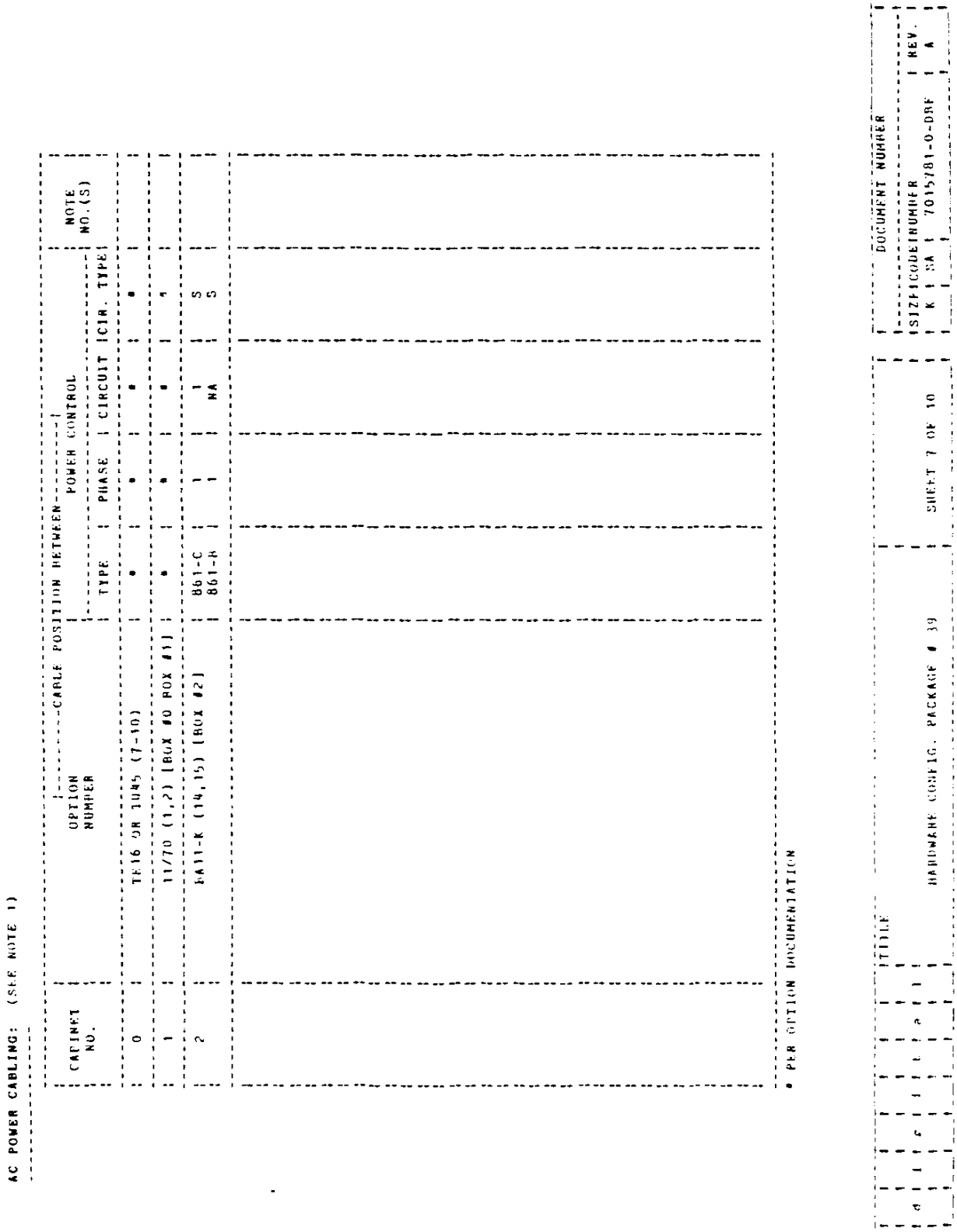

Figure 6 Sample System Arrangement Drawing (SA), AC Power Cabling (Sheet 7 of 10)

SYSTEM ARRANGEMENT

SIGNAL CABLING: (SEE NOTE 1)

CABLE PART NO.	USE	CABLE POSITION BETWEEN		REFERENCE INFORMATION
7008288-8F (19)	POWER CONTROL INTERCONNECT	POWER CONTROL CAB #0	POWER CONTROL CAB #1	
7008288-8F (19)	POWER CONTROL INTERCONNECT	POWER CONTROL CAB #1	POWER CONTROL CAB #2	
EC11A-15 (17)	UNIPUS CABLE	BOX #0 SLOT 44	BOX #2 SLOT 1	
MEMORY CABLE (1,2) NOTE 6	MEMORY INTERCONNECT	BOX #0 CPU	BOX #1 MEM.	SEE E-UA-11/70-0-0
CONSOLE INTERFACE CABLE NOTE 2,5	CONSOLE INTERFACE	DL11 (1,2)	CONSOLE CABLE NOTE 2	
CONSOLE CABLE NOTES 2,5	CONSOLE INTERCONNECT	CONSOLE INTERFACE CABLE NOTE 2,5	CONSOLE TERMINAL NOTE 2	
EC06R X3 (3-6)	RP06 OR RM03 MASS BUS	RH70 #0 CONTROLLER (3-6)	CONNECTOR PANEL (1,2) CAB #1	SEE E-UA-RWP06-A-0 SEE E-UA-RWM03-0-0
EC06S (3-6)	RP06 OR RM03 MASS BUS	CONNECTOR PANEL (1,2) CAB #1	RP06 OR RM03 (3-6)	SEE E-UA-RWP06-A-0 SEE E UA-RWM03-0-0
7412827 (3-6)	GND	CAB #1	RP06 OR RM03 (3-6)	SEE E-UA-RWP06-A-0 SEE E-UA-RWM03-0-0
EC06R-12 X3 (18) NOTE 7	TE16 OR TU45 MASS BUS	RH70 #1 CONTROLLER (11)	TE16 OR TU45 FORMATTER (7-10)	SEE D-UA-TE16-0-0 SEE D-UA-TU45-0-0

TITLE		DOCUMENT NUMBER			
HARDWARE CONFIG PACKAGE # 39	SHEET 8 OF 10	SIZE	CODE	NUMBER	REV.
		K	SA	7015781-0-DBF	A

Figure 6 Sample System Arrangement Drawing (SA), AC Power Cabling (Sheet 8 of 10)

SYSTEM ARRANGEMENT

OPTION INFORMATION:

NAME	USE	UNIBUS START ADDR.	UNIBUS # OF ADDR.	UNIBUS VECTOR	UNIBUS IPL	NOTE NO.(S)
DL11 OR KW11	LINE CLOCK	777546	1	100	6	
DL11	CONSOLE TERMINAL	777560	4	60/64	4	
MA11-BA	MEM.	000000	128Kb			
MK11-BE #0	MEM.	400000	128Kb			2
MK11-BE #1	MEM.	1000000	128Kb			2
MK11-BE #2	MEM.	1400000	128Kb			2
MK11-BE #3	MEM.	2000000	128Kb			2
MK11-BE #4	MEM.	2400000	128Kb			2
MK11-BE #5	MEM.	3000000	128Kb			2
MK11-BE #6	MEM.	3400000	128Kb			2
RH70 #0	RP06 OR RM03 CTRL.	776700	32	254	5	
RH70 #1	TE16 OR TU45 CTRL.	772440	16	224	5	

* P+M OPTION DOCUMENTATION

TITLE	DOCUMENT NUMBER
HARDWARE CONFIG. PACKAGE # 39	SIZE CODE/NUMBER REV.
SHEET 9 OF 10	K SA 7015761-0-DBF A

Figure 6 Sample System Arrangement Drawing (SA), Option Information (Sheet 9 of 10)

SYSTEM ARRANGEMENT

NOTES:

1. NUMBERS IN PARENTHESIS CORRESPONDS TO PARTS LIST ITEM NUMBER(S) OR PARTS LIST ITEM NUMBER(S) SUPPLYING ITEM.

2. THIS ITEM NOT SUPPLIED WITH HARDWARE CONFIGURATION PACKAGE. INFORMATION IS TO BE USED WHEN EXPANDING PACKAGE. EXPANSION CAN BE EITHER THROUGH HIGHER LEVEL DOCUMENTATION (i.e. PL's) OR CUSTOMER ADD-ON(S). USAGE OF AVAILABLE EXPANSION SPACE IS SUBJECT TO AND LIMITED BY APPLICATION OF PDP-11 CONFIGURATION RULES.

3. EXPANSION SPACE (SUBJECT TO AND LIMITED BY APPLICATION OF PDP-11 CONFIGURATION RULES).

4. NOT USED ON ALL VARIATIONS (SEE PARTS LIST).

5. CONSOLE TERMINAL CABLING MAY BE CONFIGURED ONE OF THREE WAYS DEPENDING ON THE INDIVIDUAL SYSTEM DESIGN. THE DL11-W IS SUPPLIED BY THE KERNEL PACKAGE. ALL OTHER CABLES, STATIC FILTERS AND CONSOLE TERMINALS ARE SUPPLIED BY HIGHER LEVEL DOCUMENTATION (i.e.PL's).

A. 20 MA. WITHOUT STATIC FILTERS:

```
--------\  7008360  /-\/-\  CONSOLE TERMINAL INTERCONNECT CABLE  /-------------|
|DL11-W |-----------| || |--------------------------------------|CONSOLE TERM.|
--------/           \-/\-/                                       \-------------|
```

B. 20 MA. WITH STATIC FILTERS:

```
--------\  7008360  /-\/-\  7008519 /-------------\  CONSOLE TERMINAL INTERCONNECT CABLE  /-------------|
|DL11-W |-----------| || |----------|STATIC FILTER|--------------------------------------|CONSOLE TERM.|
--------/           \-/\-/          \-------------/                                       \-------------|
```

C. EIA WITH STATIC FILTERS:

```
--------\  BC03L-10 /-\/-\  CONSOLE TERMINAL INTERCONNECT CABLE  /-------------|
|DL11-W |-----------| || |--------------------------------------|CONSOLE TERM.|
--------/           \-/\-/                                       \-------------|
```

6. PER 11/70 DOCUMENTATION.

7. REPLACES CABLES SUPPLIED WITH FORMATTER

							TITLE		DOCUMENT NUMBER			
d		e			a		HARDWARE CONFIG. PACKAGE # 39	SHEET 10 OF 10	SIZE	CODE	NUMBER	REV.
									K	SA	7015781-0-DHF	A

Figure 6 Sample System Arrangement Drawing (SA), Reference Notes (Sheet 10 of 10)

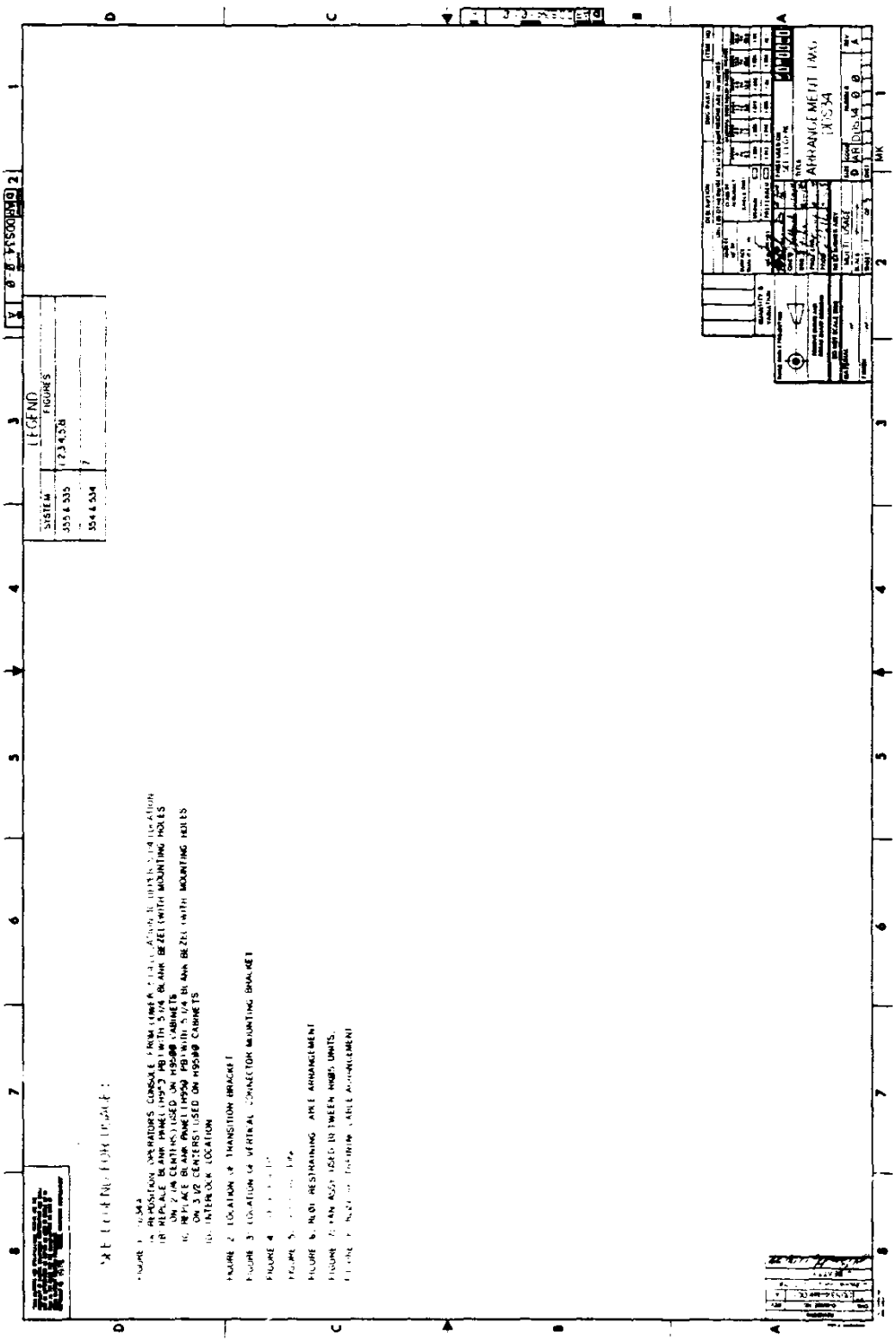

Figure 7 Sample of An Arrangement Drawing
(Sheet 1 of 5)

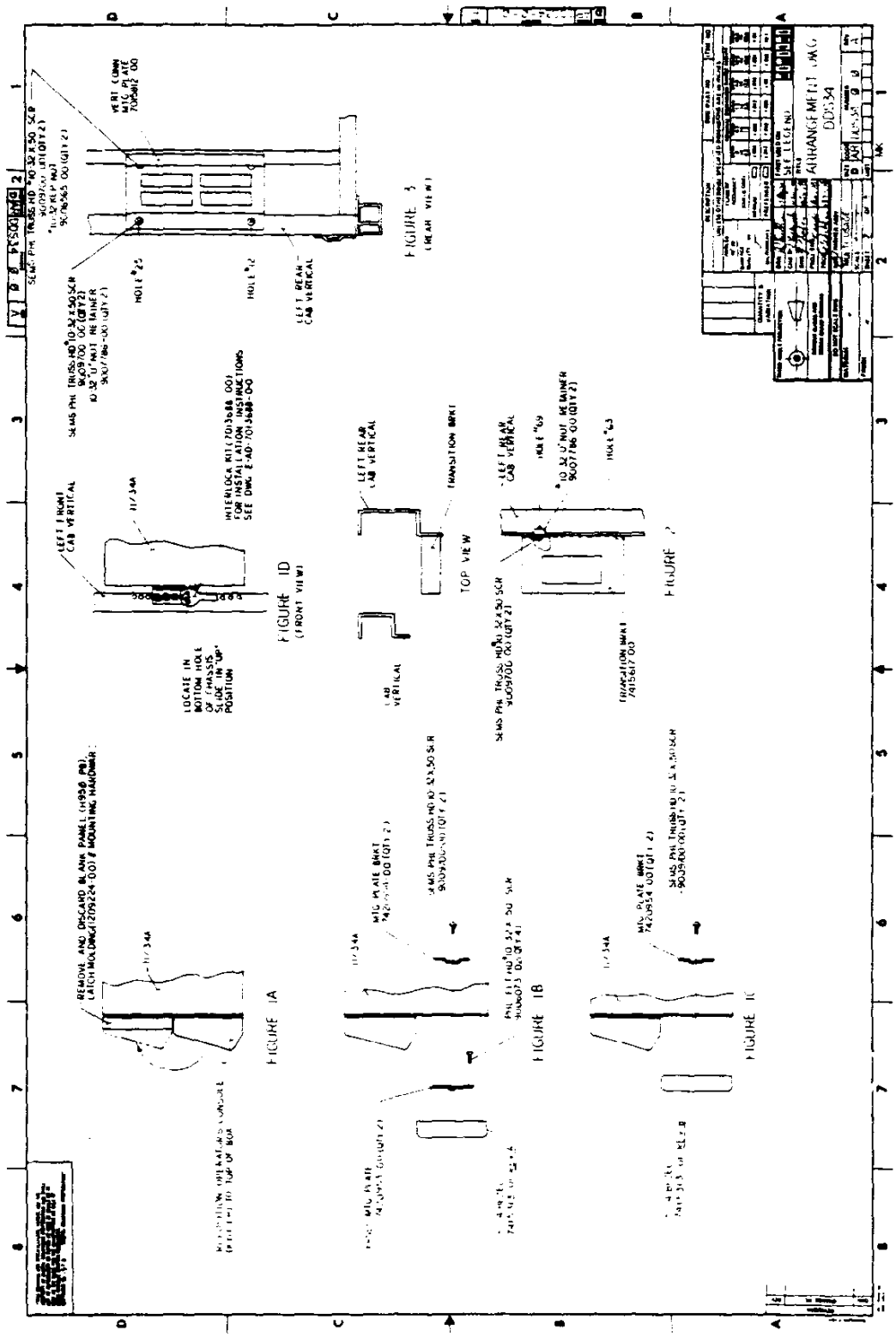

Figure 7 Sample of An Arrangement Drawing
(Sheet 2 of 5)

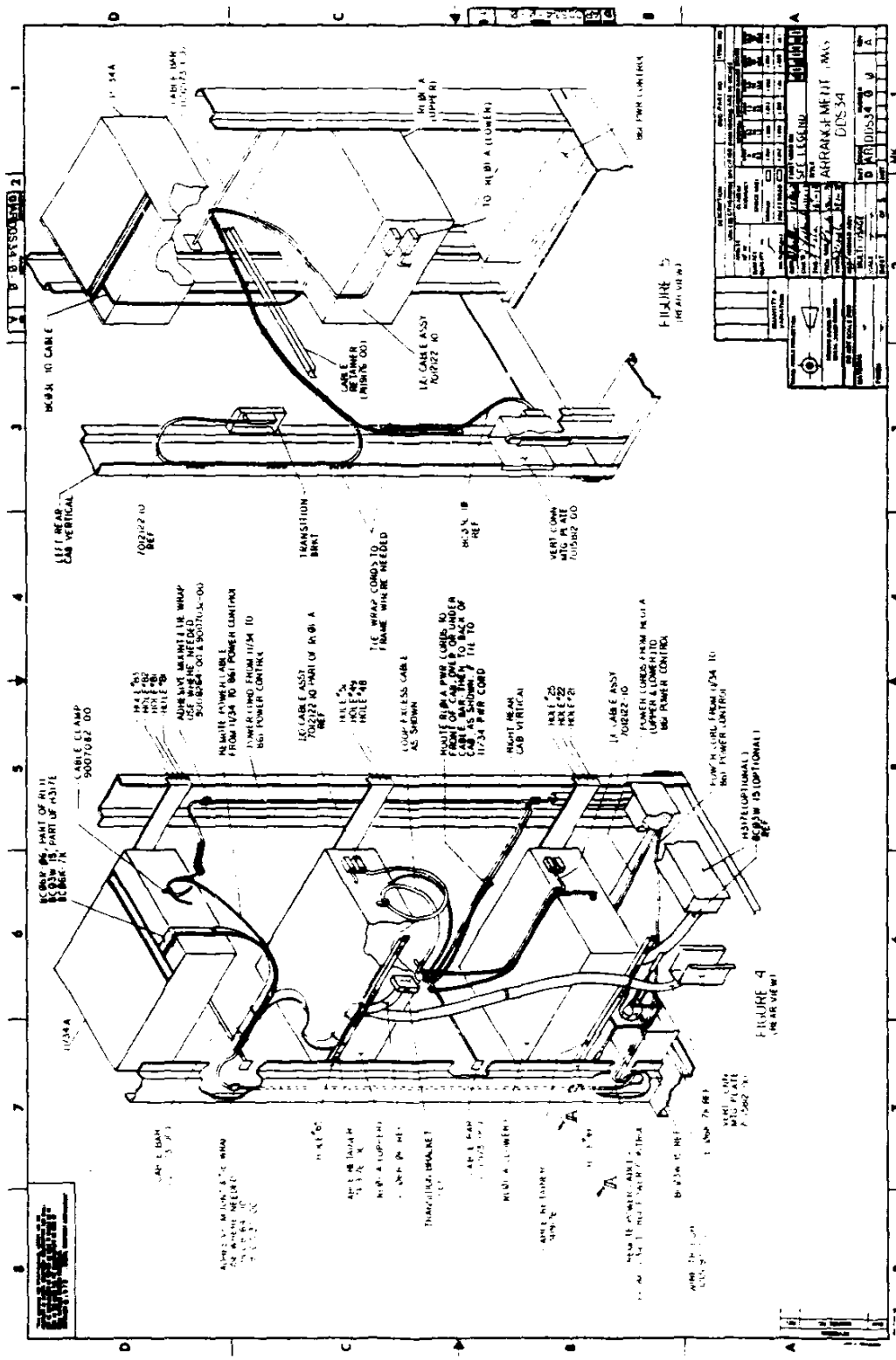

Figure 7 Sample of An Arrangement Drawing
(Sheet 3 of 5)

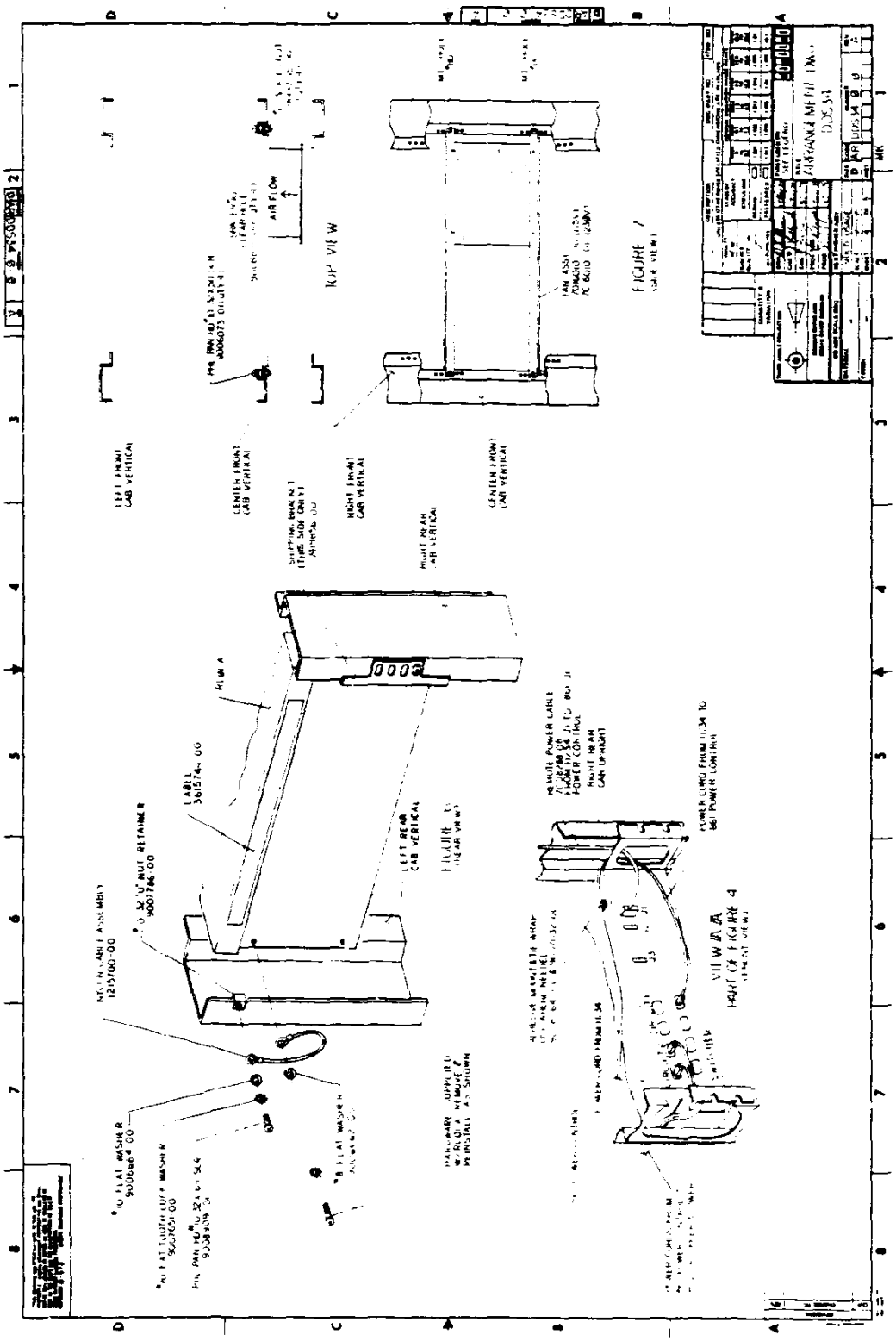

Figure 7 Sample of An Arrangement Drawing
(Sheet 4 of 5)

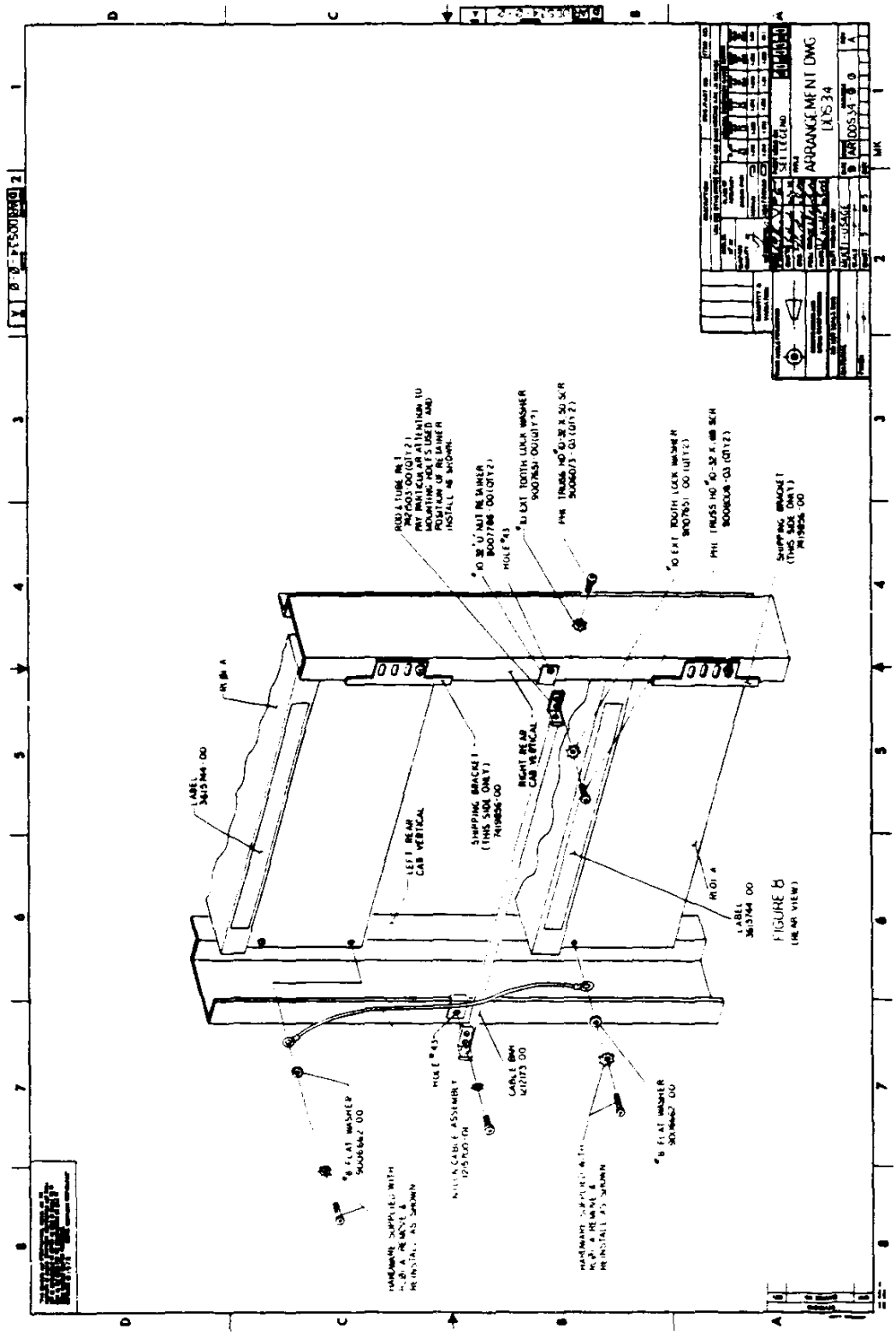

Figure 7 Sample of An Arrangement Drawing
(Sheet 5 of 5)