

Cct. Ref.	Qty.	Description	Supplier
	1	M68000 VM DAUGHTER BOARD CSD 161 REV A	
		RESISTOR NETWORKS	
RN1,2	2	8-PIN SIL'S 7x1K RESISTORS PIN 1 COMMON AB MICRO 770 SERIES OR R.S. COMPONENTS	STC 95430F RS 149-262
		CAPACITORS	
CI-16	16	AXIAL SOLID ELECTROLYTE TANT. (POLARISED) 1uF 35VW	RS 104-815
		TERMINAL STRIPS	
	2	32-PIN 14132-58-445	SCOTT ELECTRONICS
		DELAY LINE	
IC10	1	10 TAP 5nS/TAP 50nS OVERALL	FARNELL 175-218

EDINBURGH UNIVERSITY

DEPT.

COMPUTER SCIENCE

TITLE

M68000 VM DAUGHTER BOARD.

ISSUE

A

No.

-

DATE

24/9/87

DRN.

J.S.

CHK'D

COMPONENTS LIST

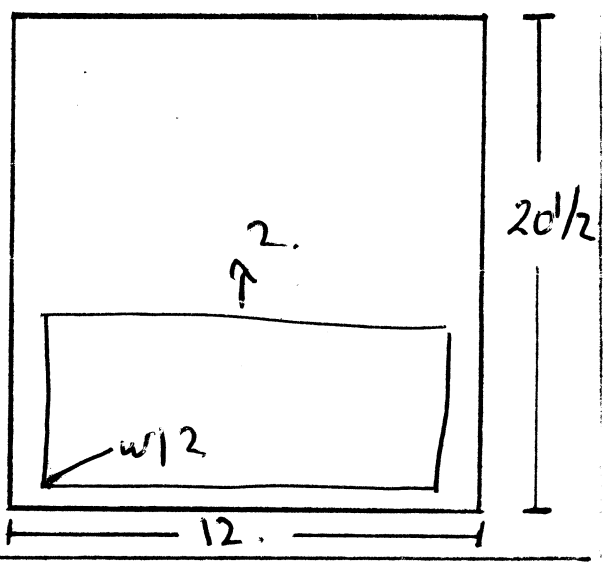
A4/161

SHEET 1 OF 2

CUSTOMER	PART NO	ISSUE	NO COT	S. OR D/S	NEG. NO	Run Time
EDINBURGH/UNIV	C/S/D142	1	2	DS	4153	

Align To Rows of lcc's up left of cot. Move to "C" PADS and move down to bottom left; hand corner Block & w/2

X-001
Y-08939



WORKS ZERO	XL3	X	Y
WORKS ZERO	EX200	X	Y

No	Drill Size	Ref.	No Holes	X	Total
#1	3.175	Ext Lcc	3		3
#1	3.175	Print	8		8
#2	.85	E	925	x2	1850
#3	1.05	A	1823	x2	3646
#4	1.25	G.	72	x2	144
#5	1.70	C	1	x2	2
#6	2.80	B	4	x2	8
#7	3.20	D	2	x2	4
9	.				
10	.				
11	.				
12	.				
13	.				
14	.				
15	.				
16	.				
17	.				
18	.				
19	.				
20	.				
21	.				
22	.				
23	.				
24	.				

F.S.	AUTO	MANUAL
F.S.	INCH	METRE

Step
m01
m0209689
m02

Total

X003 Y-003
X-003 Y003
X-003 Y18
X003 Y192
X08 Y192
X09 Y18
X09 Y003
X08 Y-003

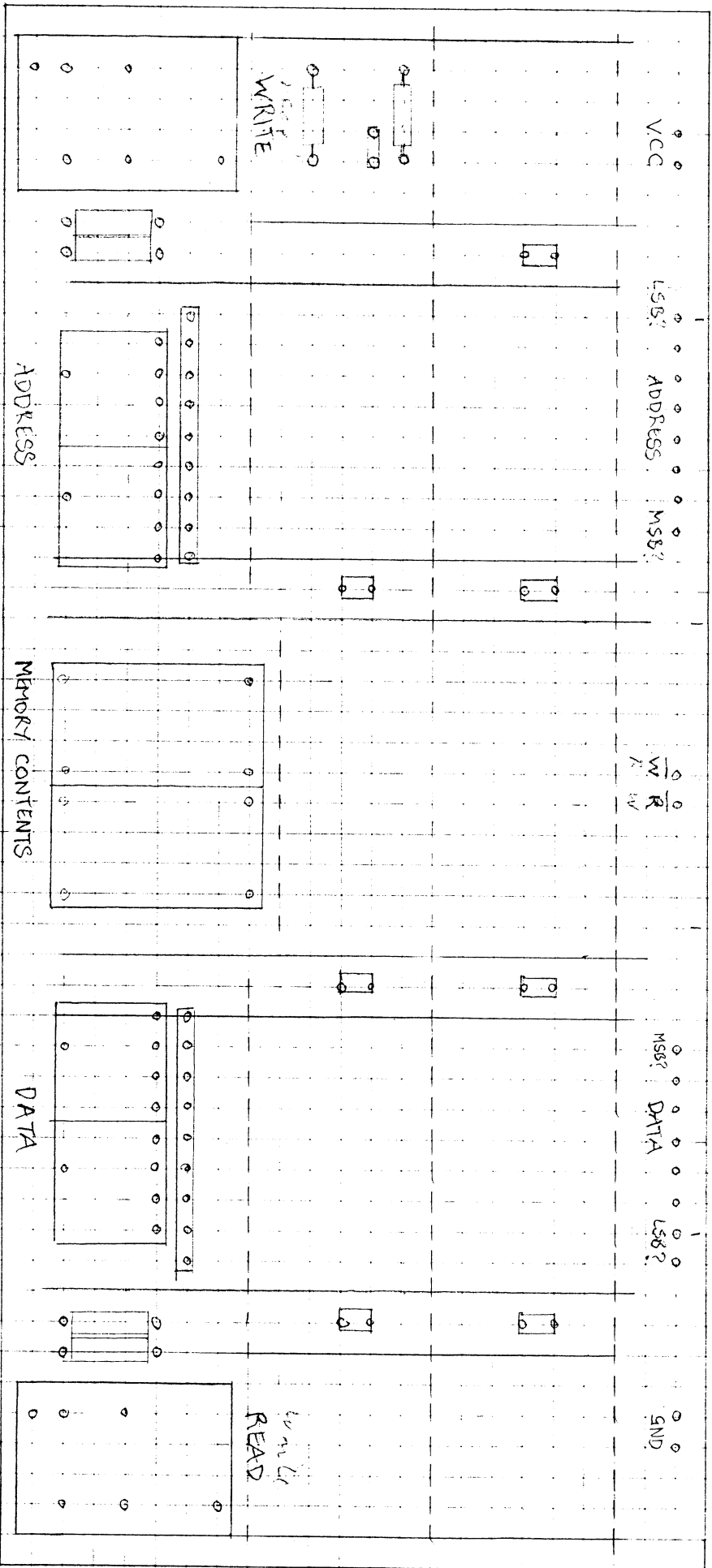
EXT LCC

X05 Y-005
X05 Y195
X10 Y06

"C" PAD
X001 Y08939

Co. Ref.	Qty.	Description	Supplier
		IC SOCKETS	
IC1-3	3	68-PIN PGA 10x10 0.1" GRID	FARNELL 175-965
		TEXAS COS SERIES 0.3" DIL'S	
IC11-13	3	14-PIN	
IC4-7	4	20-PIN	
IC8-9	2	24-PIN	
		PROCESSOR BOARD REPLACEMENT SOCKET PRECISION TURNED PIN TYPE	
	1	64-PIN EMC PART NO 21964-47-445	SCOTT ELECTRONICS.
		INTEGRATED CIRCUITS.	
IC1	1	MC68010R10 10x10 GRID PROCESSOR	/MOTOROLA
IC2,3	2	MC68451R10 10x10 GRID MEMORY MANAGEMENT	/MOTOROLA
IC12	1	74F08	
IC11	1	74F11	
IC13	1	74S03	
IC4,5	2	74F245	
IC6,7	2	74F373	
IC8,9	2	PAL'S 20L8ACNS	/MMI

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	A	-	24/4/87	J.J.	
DEPT.	COMPUTER SCIENCE				
TITLE	M68000 VM DAUGHTER BOARD.		COMPONENTS LIST		
			A4/161		
			SHEET 2 OF 2		



MEMORY PCB LAYOUT.

Cct. Ref.	Qty.	Description	Supplier
C1	1	100 μ F 100V electrolytic Cap	RS
C3	1	100 μ F 25V electrolytic Cap	RS
C2	1	100 μ F 50V electrolytic Cap	RS
R1,2,3,4	3	1K6 6WATT WW Wologny 1/2W	Fornell
R3	1	330R 5WATT WW Wologny 1/2W	Fornell
R5	1	1K2 1/2W	
R6	1	620R	
R7	1	10R	
R8	1	100R	
R9	1	220R	
R10	1	330R	
R11	1	550R	
R12,13	2	1K "	
D1,2,3,4	4	10D4 1Amp 400Volt Sil Rect	ITT
D5	1	12 volt Zener BZX61	RS
TR3,4,5,6	4	Z-X 300 110V TRANS	Fornell
TK1,2	2	BF 259 400V Trans	RS
OT1,2	2	TIL 107 Opto-Isolator	TI
	1	Minibox 1 ³ / ₈ x 2 ¹ / ₈ x 3 ¹ / ₈ 275 22C	ITT
	1	Key Sw BPO 1002 ITT 28225C	ITT
		PYL 710 S527616 240/240	
	1	2.5 in x 1.5 in x 1/8 in Alum Strip	
	9	P109 Extra Red 100 Red 440823-01	Amphenol
	1	P109 6 BA Tag Red	"
	7	6in lengths of 7/0.2mm PVC wire	RS
	1	45in length STD MULTI-WIRE	RS
	2	3m lengths of 1/2mm 8-wire	RS
	3 in	large electrical's screws	RS
	6 in	medium electrical's screws	RS
	2	4 BA Nylon Nut	RS
	2	6 BA Nylon screw, medium standard	RS
	2	.7 in spacers	

EDINBURGH UNIVERSITY	ISSUE	No.	DATE	DRN.	CHK'D
	A	—			
DEPT.					
Computer Science					
TITLE	COMPONENTS LIST				
Switched Power Distribution System	A4/052				
	SHEET OF				

Cct. Ref.	Qty.	Description	Supplier
1,5,6 8,15,17 26,27	8	7400 Quad 2 input NAND	
10,12,23	3	7402 Quad 2 input NOR	
4,20 26,27 31,35	6	7404 Hex inverters	
7	1	7428 Quad 2 input AND	
2	1	7414 Hex Schmitt Inverter	
3	1	7417 O.C. Buffer	
38	1	7420 4 input NAND	
22,30	2	7430 8 input NAND	
7,11,12 15,14 18,24	7	7438 Quad 2 input NAND (OC Buffer)	
14,25 33,34	4	7476 Dual I-K	
	31	0.01 μ F Capacitors	
		50 μ F Tantalum (distributed)	
	2	200 μ F	
	2	470 Ω resistors $\frac{1}{2}$ watt	
	5	1k resistors "	
	2	2k resistors "	

EDINBURGH UNIVERSITY

DEPT.

Computer Science

TITLE

Introdto Ab. Link Interface
(1st and 2nd)

ISSUE

A

No.

—

DATE

DRN.

CHK'D

COMPONENTS LIST

A4/033

SHEET 1 OF 2

Cct. Ref.	Qty.	Description	Supplier
50,51 53,62	4	7403 Quad 2 input NAND	
55,58	2	7402 Quad 2 input OR	
52,57	2	7404 Hex. inverter	
53	1	7408 Quad 2 input AND	
		7	
60,61	2	7410 3 input NAND	
57	1	7430 8 input NAND	
64	1	7437 Quad 2 input NAND Buffer	
42,43 48,49 54	5	7474 Dual J-type	
44,45 65,68 69	5	7493 ÷16 counter	
66	1	8713	Signetics
59	1	8714	Signetics
41	1	74104 8 Bit Schmitt Trigger	
45	1	74105 8 Bit Schmitt Trigger	
	1	16 Pin VIL Socket	
	1	4.224 MHz CRYSTAL OSC. Type FS5901/11	Cathodron

EDINBURGH UNIVERSITY	ISSUE	No.	DATE	DRN.	CHK'D
	A	—			
DEPT.					
Computer Science					
TITLE	INTERVIEW WITH AA WORK INTERVIEW		COMPONENTS LIST		
(AA Work Interview)			A4/033		
			SHEET 2 OF		

2	75 Ω .05 W oxide Resistor	RS
1	47K 1/4 watt	
1	470K 1/4 "	
1	1K 1/4 watt	
1	1 μF 63V General Purpose Electrolytic Cap.	
28	101 μF Decoupling Electrolytic Cap.	
4	ZTA 500 PNP Transistor	Excess
2	ZTA 305 NPN Transistor	Excess
1	Amp 3-85925-4 Connector	

EDINBURGH UNIVERSITY	ISSUE	No.	DATE	DRN.	CHK'D
	A	—			
DEPT.					
Computer Science					
TITLE	Introduction to the use of the computer		COMPONENTS LIST		
	A4/		SHEET 2 OF 3		

Item	Drug No	4mm Description	Qty.
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NOTES

1. SHEET SIZE A4
2. PRINT ON UNDERSIDE
3. ALL CHARACTERS UNLESS SHOWN OTHERWISE TO BE 2mm HIGH
4. DIMENSIONED IN MILLIMETRES
5. THE LETTERS IN 'EDINBURGH UNIVERSITY' TO BE SLIGHTLY THICKER THAN THOSE OF THE OTHER BOX NAMES.

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ISSUE NO	DATE	DR.	CHK'D
A	-		

DEPT.

TITLE

PARTS LIST

A4/



SHEET OF

Cat Ref. Qty.

4mm $\frac{4}{1}$ Description

Supplier

NOTE :- SEE PARTS LIST

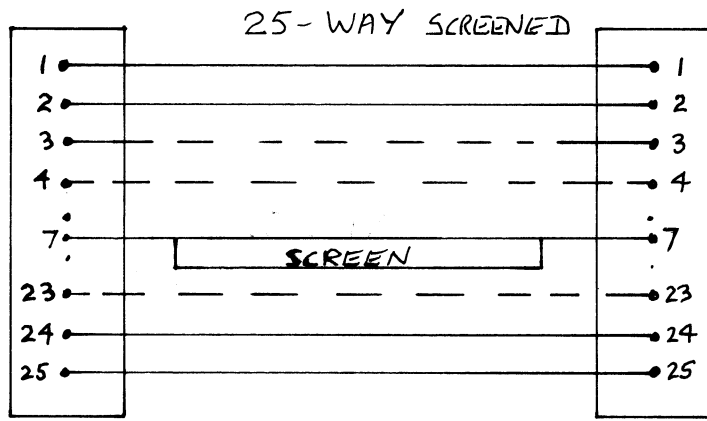
EDINBURGH UNIVERSITY $\frac{4mm}{1}$

ISSUE NO DATE DRN CHK'D
A -

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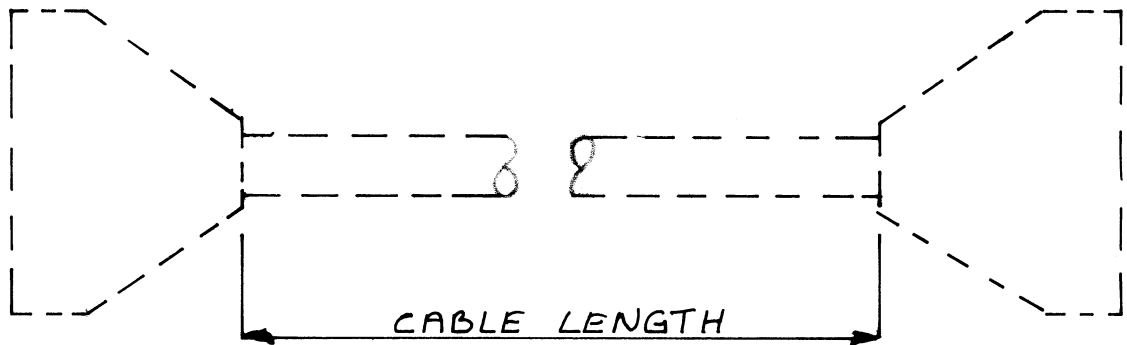
TITLE

COMPONENTS LIST
A4 / $\frac{4mm}{1}$
SHEET OF



CONNECTOR 'A'

CONNECTOR 'B'

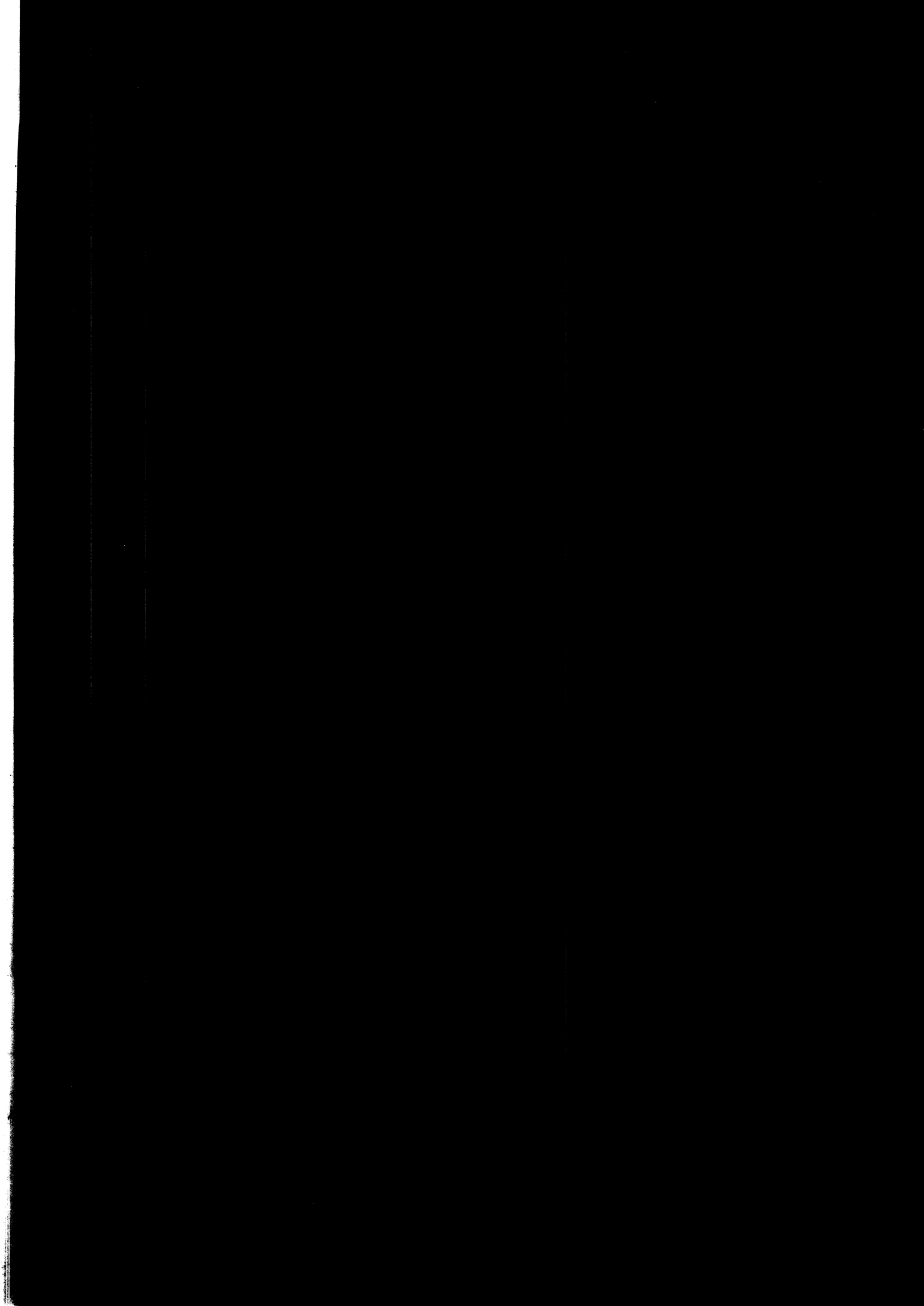


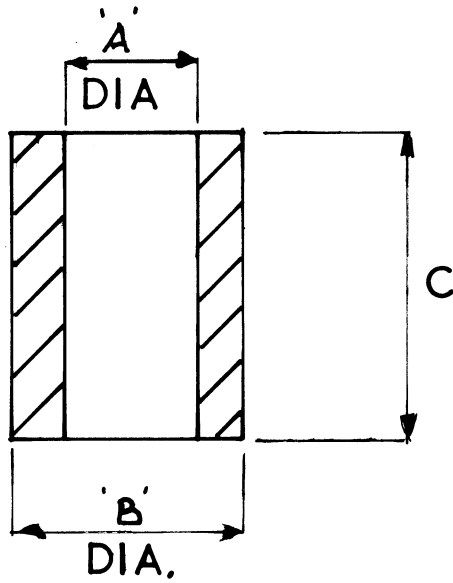
CONNECTOR 'A'	25 WAY 'D' TYPE SOCKET
CONNECTOR 'B'	25 WAY 'D' TYPE PLUG

CABLE LENGTH =

Nº OFF =

MAT.		TREATMENT			FINISH				
EDINBURGH UNIVERSITY					ISSUE	No.	DATE	DRN.	CHK'D
					A	-	15/2/80	J.J.	
DEPT. COMPUTER SCIENCE									
TITLE CABLE ASSEMBLY					DRWG No. A4/125				
					SHEET 1 OF 1				



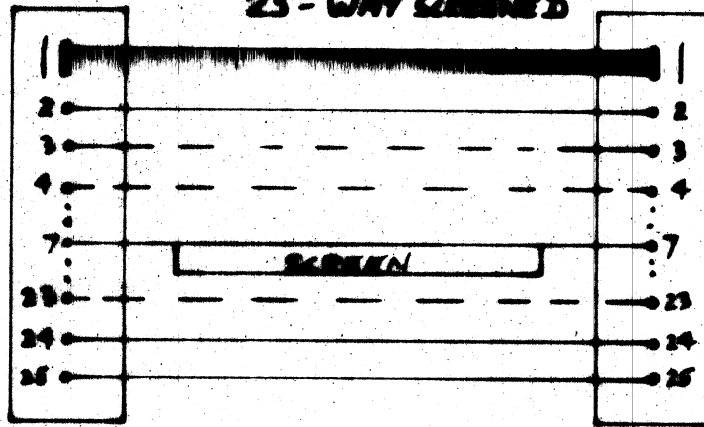


REF	N ^o OFF	DIMENSION		
		A	B	C

NOT TO SCALE

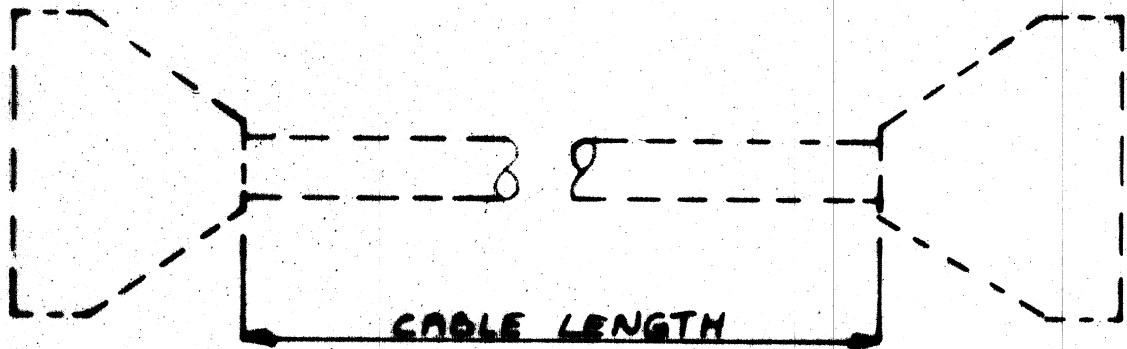
MAT.		TREATMENT			FINISH			
EDINBURGH UNIVERSITY				ISSUE	No.	DATE	DRN.	CHK'D
				A	—	13/4/72	JWMI	
DEPT. COMPUTER SCIENCE								
TITLE SPACER					DRWG No. A4/010/04			
					SHEET 1 OF 1			

25-WAY SCREENED



CONNECTOR 'A'

CONNECTOR 'B'



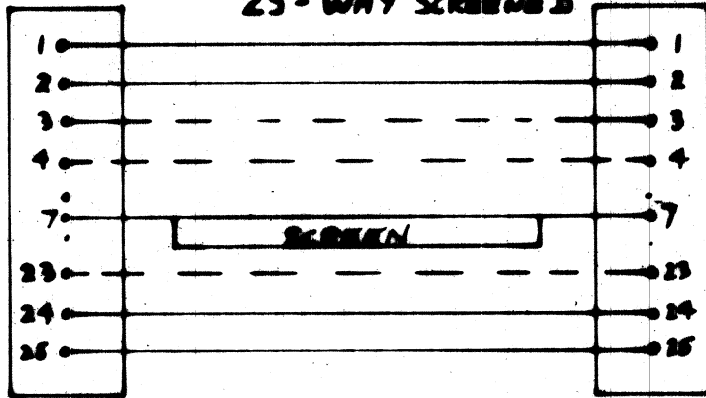
CONNECTOR 'A'	25 WAY 'D' TYPE	SOCKET
CONNECTOR 'B'	25 WAY 'D' TYPE	SOCKET

CABLE LENGTH =

NO OFF =

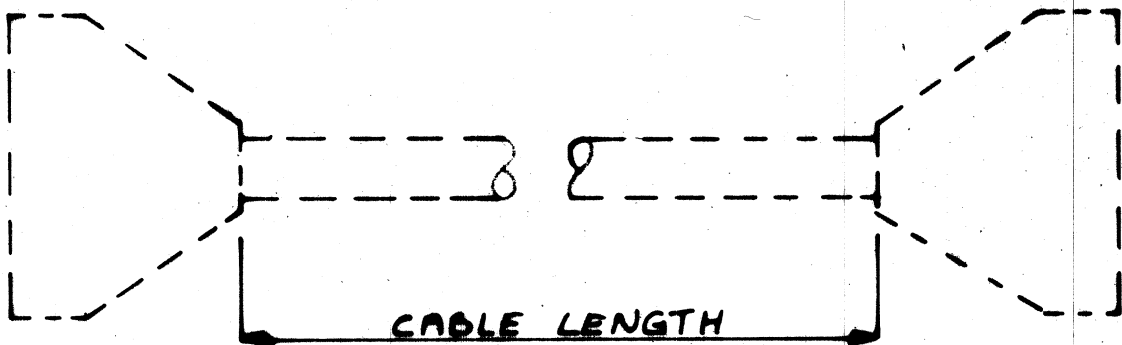
NO.	REVISION	ISSUE	DATE	BY	CHKD
UNIVERSITY			A	-	6.3.
COMPUTER SCIENCE					
CABLE ASSEMBLY			M/127		

25-WAY SCREENED



CONNECTOR 'A'

CONNECTOR 'B'

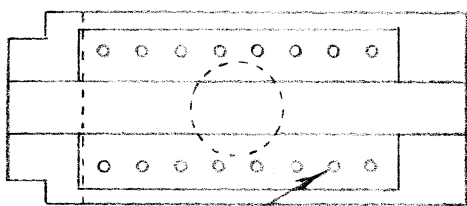
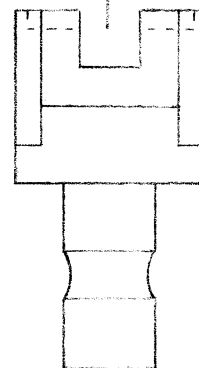
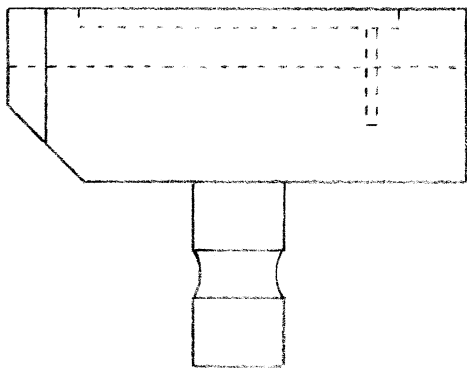
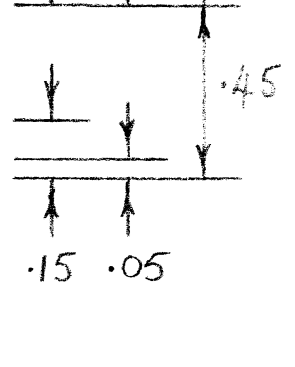
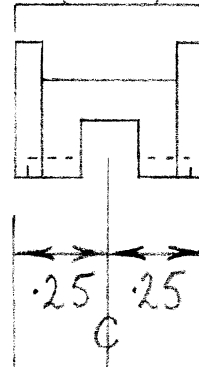
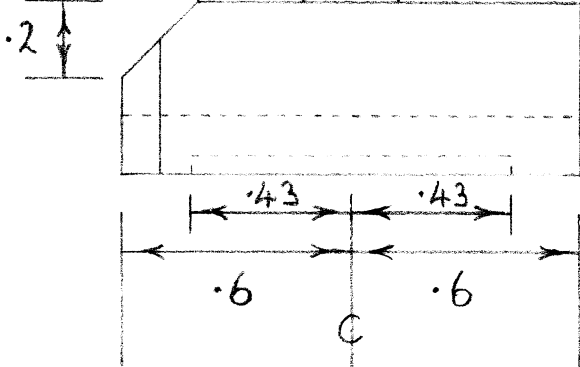
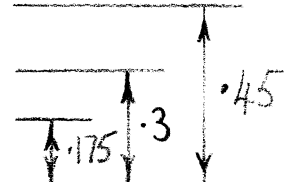
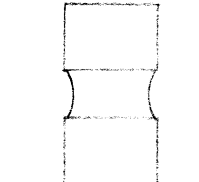
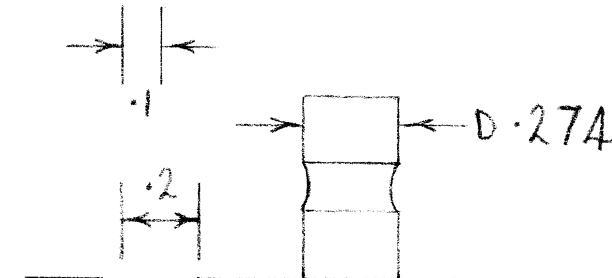
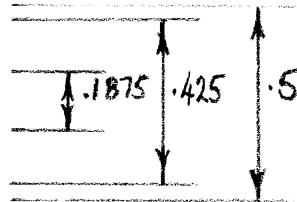
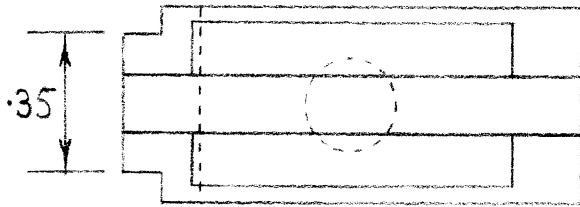


CONNECTOR 'A'	25 WAY 'D' TYPE PLUG
CONNECTOR 'B'	25 WAY 'D' TYPE PLUG

CABLE LENGTH =

N° OFF =

MAT.	TREATMENT	FINISH				
EDINBURGH UNIVERSITY		ISSUE	No.	DATE	DRN.	CHK'D
		A	-	05/2/86	J.J.	
DEPT. COMPUTER SCIENCE						
TITLE CABLE ASSEMBLY		DRWG No. A4/126				
		SHEET 1 OF 1				



HOLES .030 DIAM.

BOTH PARTS ARE THE SAME EXCEPT FOR THE MATRIX OF .030 DIAM. HOLES

MAT. MS or BRASS or DURAL		TREATMENT			FINISH				
EDINBURGH UNIVERSITY					ISSUE	No.	DATE	DRN.	CHK'D
					A	—	30/05/79	P.S.L.	
DEPT. COMPUTER SCIENCE									
TITLE 3M DIL CRIMP TOOLS					DRWG No. A4/98				
					SHEET / OF /				

CARD READER INTERFACE / MOHAWK READER CABLE CONNS

24 PIN
COMPONENT CARRIER

AMP
24 PIN

AMP
60 PIN

1	ICL 12 (RED)	8	ICL 12 (RED) (WHITE)	1
2	ICL 11 (BROWN)	6	ICL 11 (RED)	2
3	ICL 10 (BLACK)	17	ICL 10 (ORANGE)	3
4	ICL 9 (WHITE)	5	ICL 9 (DARK BLUE)	4
5	ICL 8 (GREEN)	16	ICL 8 (YELLOW)	5
6	ICL 7 (PURPLE)	4	ICL 7 (GREEN)	11
7	ICL 6 (BLUE)	15	ICL 6 (YELLOW + RED)	12
8	ICL 5 (GREEN)	3	ICL 5 (DARK GREEN)	13
9	ICL 4 (YELLOW)	14	ICL 4 (ORANGE + RED)	14
10	ICL 3 (ORANGE)	2	ICL 3 (PURPLE)	15
11	ICL 2 (RED)	13	ICL 2 (GREEN + RED)	21
12	ICL 1 (BROWN)	1	ICL 1 (GREEN + RED)	22
13	(BLACK)	22	(BLACK)	60
18	IHESF (WHITE)	10	IHESF (LIGHT GREEN)	31
19	IPP (GREEN)	21	IPP (LIGHT BLUE)	32
20	ITR (PURPLE)	9	ITR (PINK)	25
21	ICHE (BLUE)	20	ICHE (KHAKI)	10
22	IDS (GREEN)	8	IDS (BROWN)	23
23	IRDY (YELLOW)	19	IRDY (WHITE + BLUE)	24
24	IRC (ORANGE)	7	IRC (WHITE)	42



20 WAY
RIBBON
CABLE

20 PAIR
CABLE

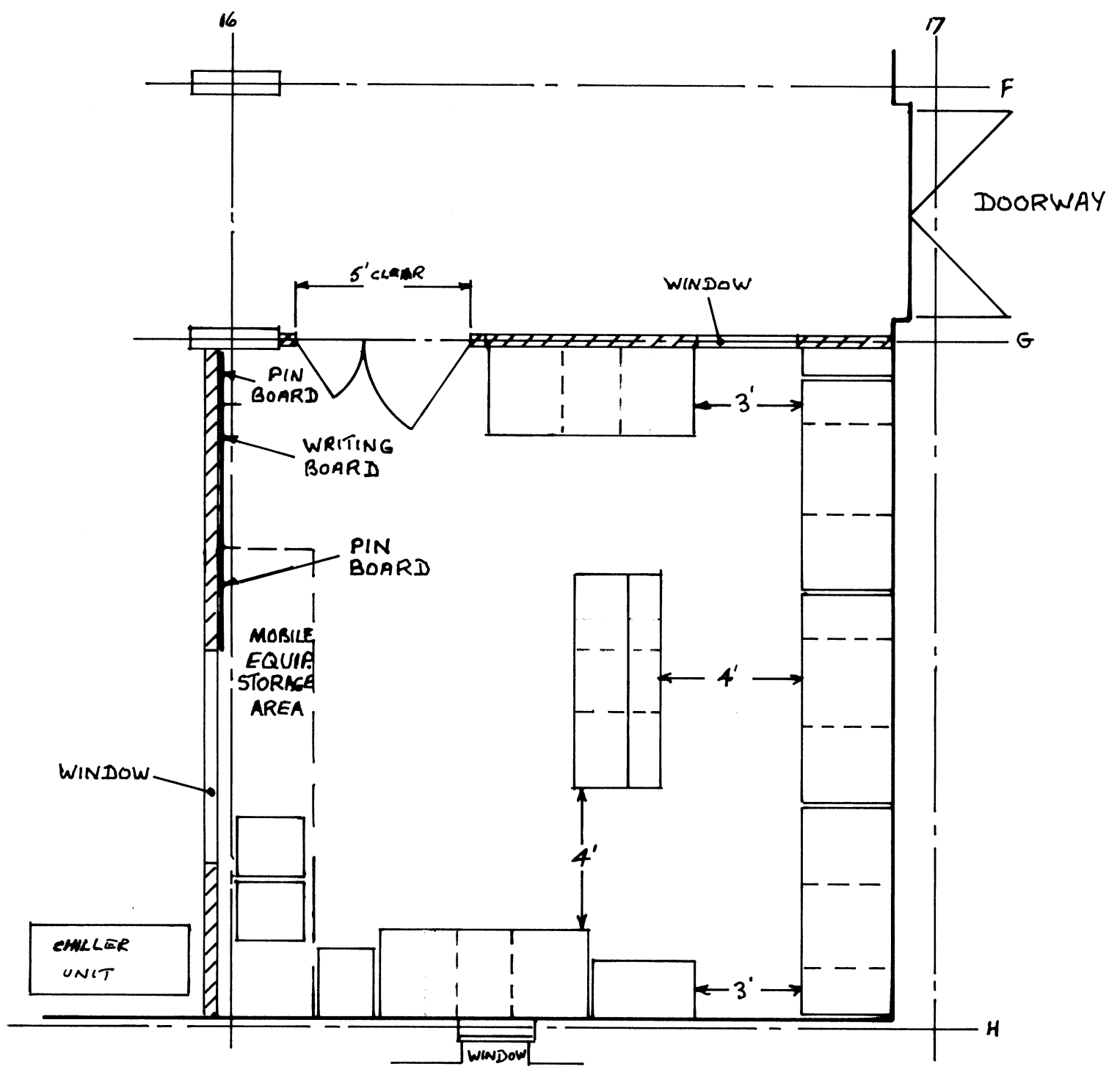
INPUT
MODULE

INTERFACE
BACK PANEL

CARD
READER

MOHAWK CARD READER INTERFACE

DRAWING A1/03



FIG

SCALE $\frac{1}{2}'' = 2\text{ft}$

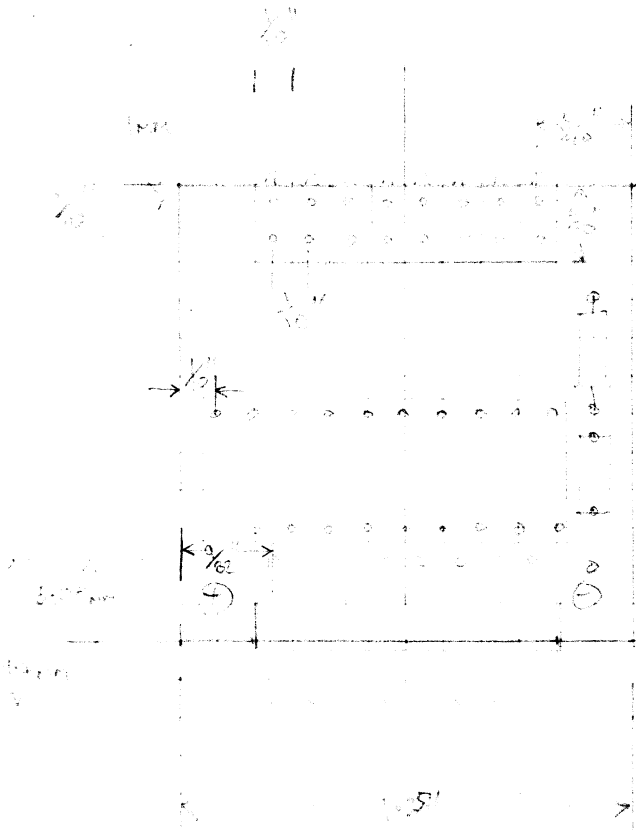
25mm

5mm

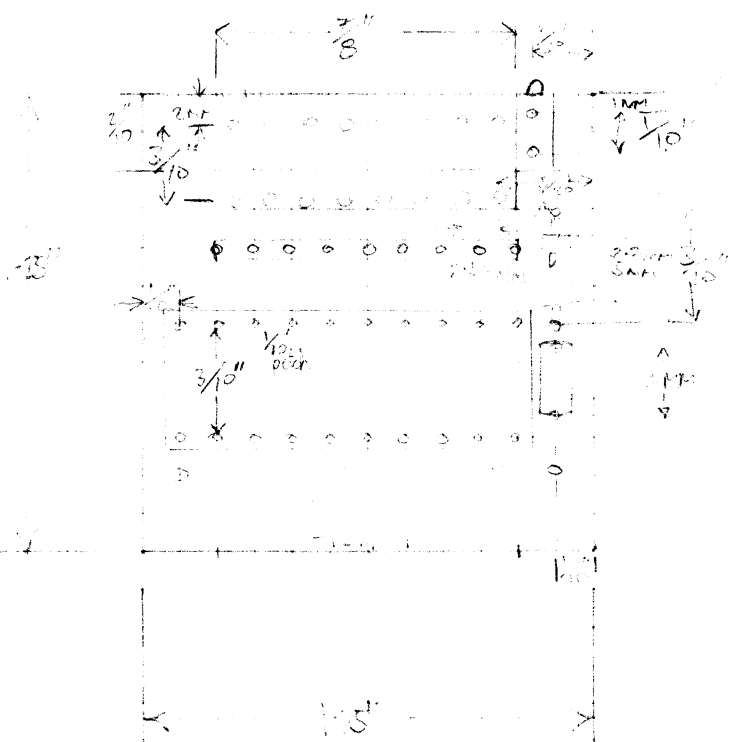
NOTES

1. SHEET SIZE A4
2. BORDER LINES SHOULD BE SLIGHTLY THICKER THAN THE OTHER FORMAT LINES
3. PRINT ON UNDERSIDE
4. ALL CHARACTERS, UNLESS SHOWN OTHERWISE, TO BE 2mm HIGH.
5. DIMENSIONED IN MILLIMETRES
6. THE LETTERS IN 'EDINBURGH UNIVERSITY' SHOULD BE SLIGHTLY THICKER THAN THOSE OF THE OTHER BOX NAMES.

MAT.	TREATMENT	FINISH
EDINBURGH UNIVERSITY	4mm A	ISSUE N° - DATE DRW. CHG.
DEPT.	TITLE	DRWG N° A4 / 4mm SHEET OF



BUS MONITOR
PCB LAYOUT



BUS DRIVER
PCB LAYOUT

M48

To2 F050S22

¹⁰
3 m25

To201

G00X y -

M15 F05

042.

G01X05661 y

X08661 y045

m16

040

G00X08661 y0461

M15 F05

042

G01X08661 y09189

X0411 y09189

m16

040

G00X04 y04189

M15 F05

042

G01X y09189

X y0411

m16

040

G00X y04

M15 F05

042

G01X y-001

m16

040

m24

m26 x y09689

m26

m27

m30