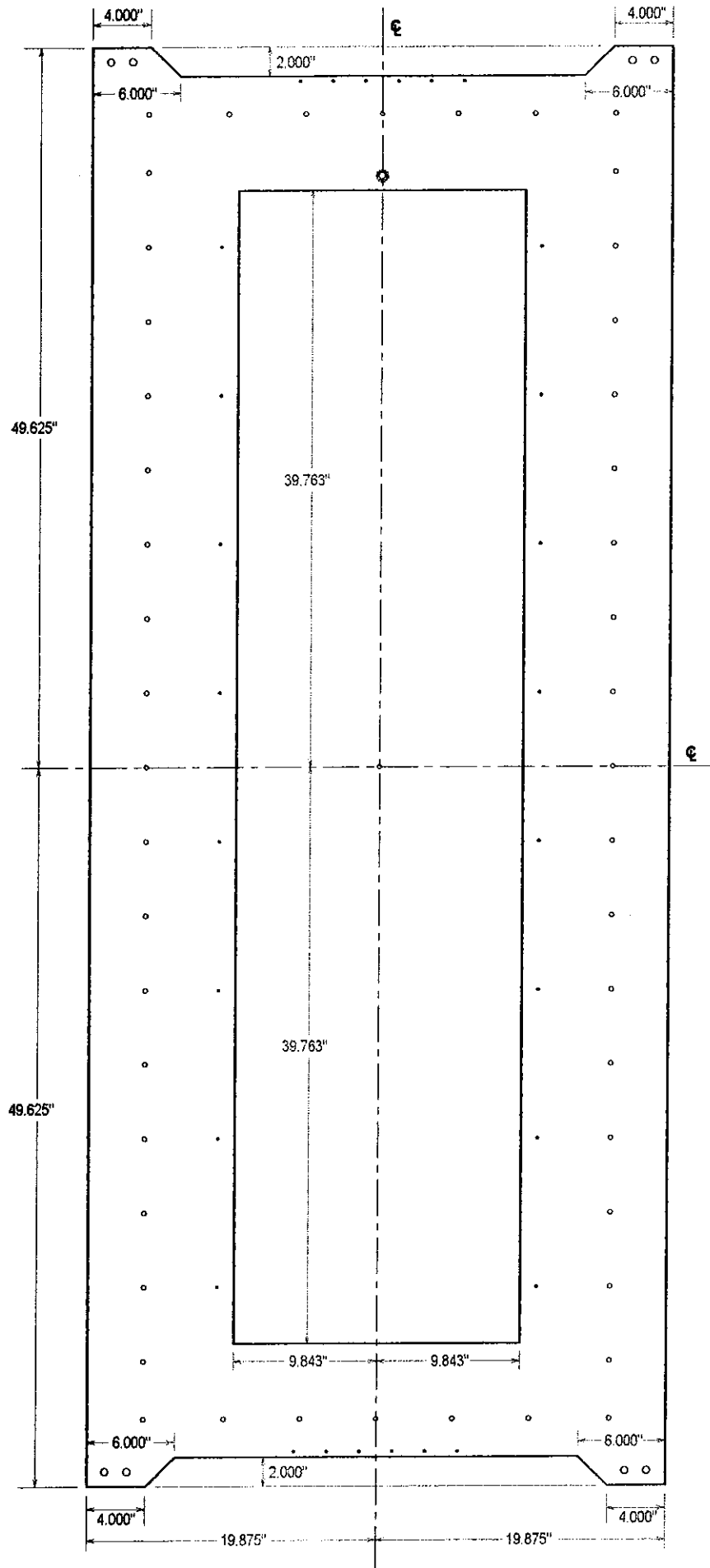
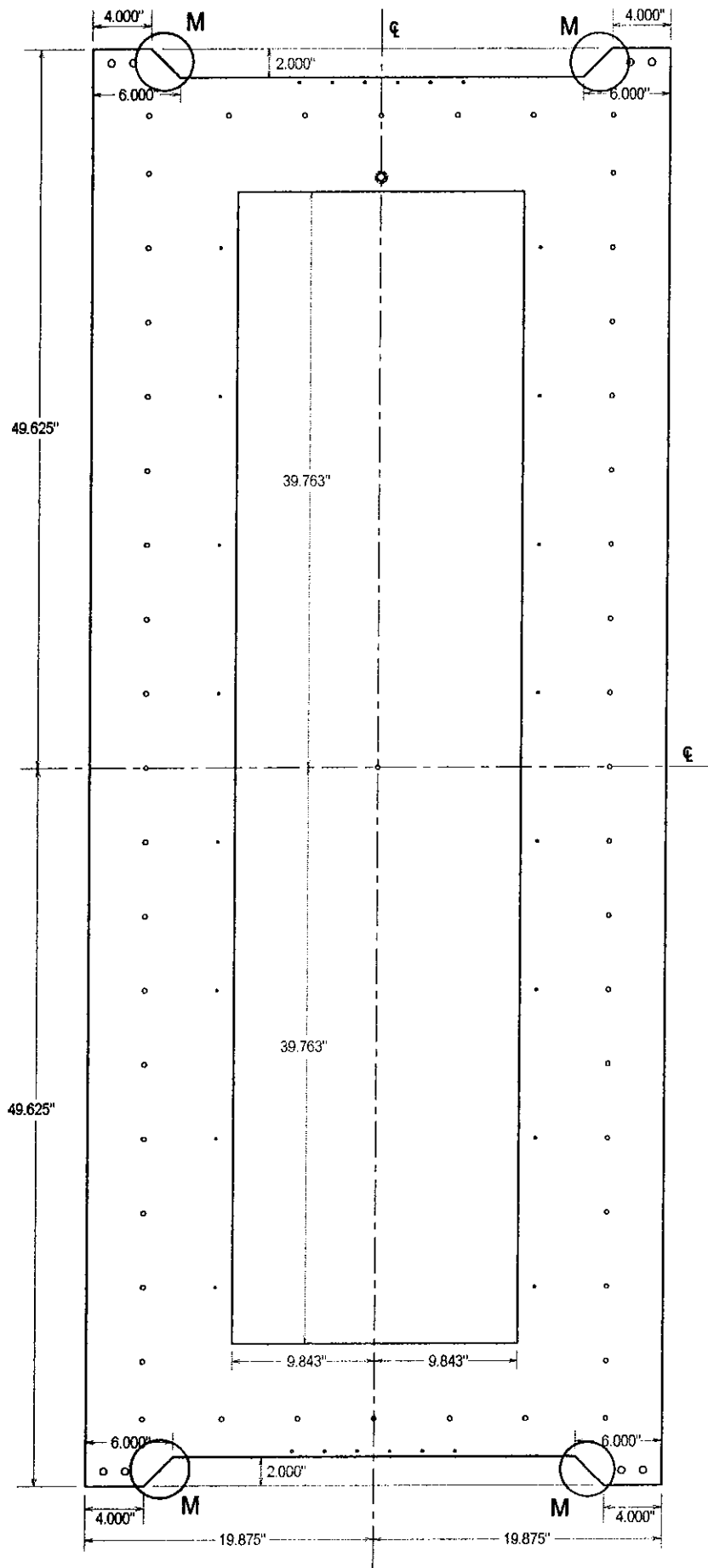


BBC 2 BASEPLATE: DIMENSIONS
MATERIAL: 1/2" THICK ALUMINUM PLATE



BBC 2 BASEPLATE
MODIFICATIONS TO DIMENSIONS
(M) INDICATES AREA OF MODIFICATION

MATERIAL: 1/2" THICK ALUMINUM PLATE



BBC 2 BASEPLATE: HOLE SPECIFICATIONS

DIMENSIONS

X= 1.125"

Y= 2.250"

Z= 1.500"

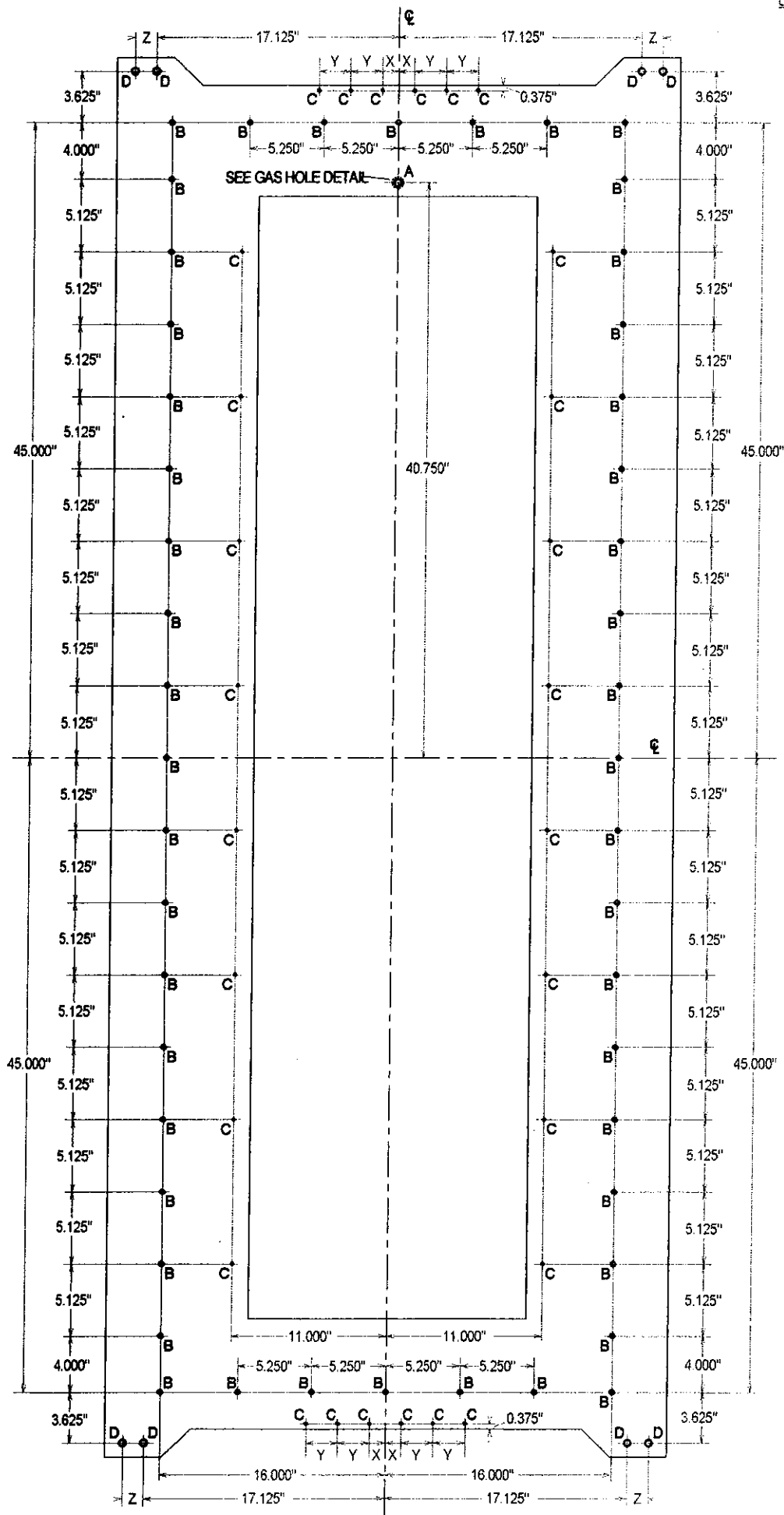
HOLES

A: SEE GAS HOLE DETAIL

B: DRILLED and TAPPED FOR
5/16" x 18 MACHINE SCREW

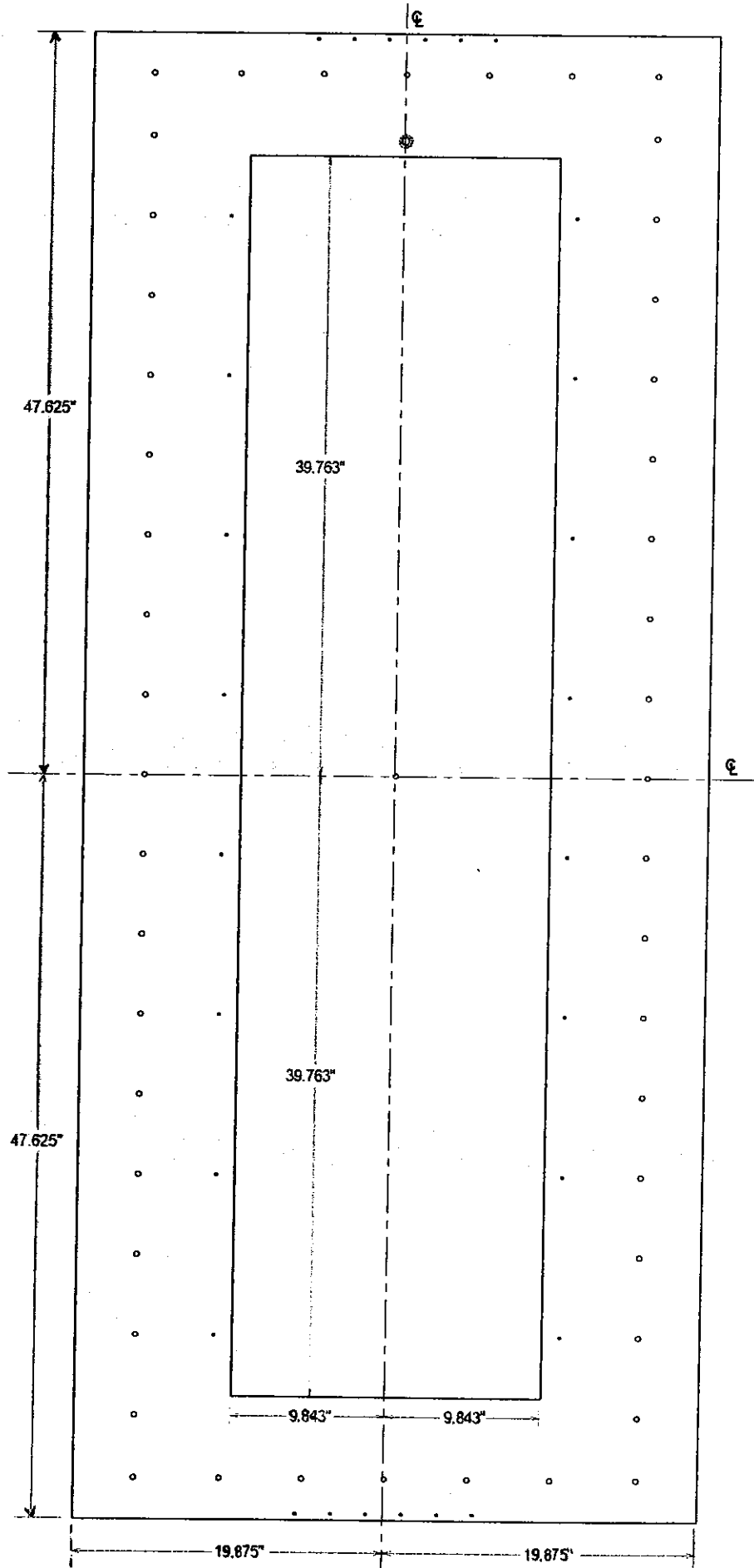
C: DRILLED and TAPPED FOR
10 x 32 MACHINE SCREW

D: DRILLED and TAPPED FOR
1/2" x 13 MACHINE SCREW

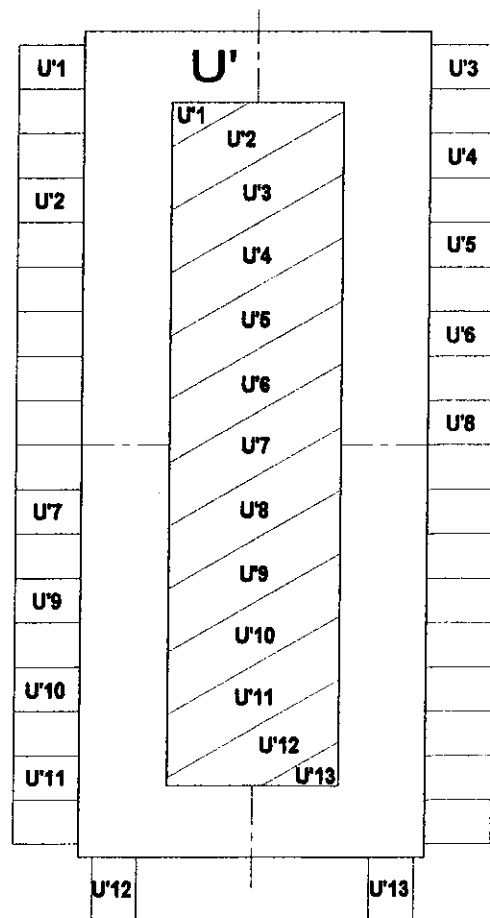
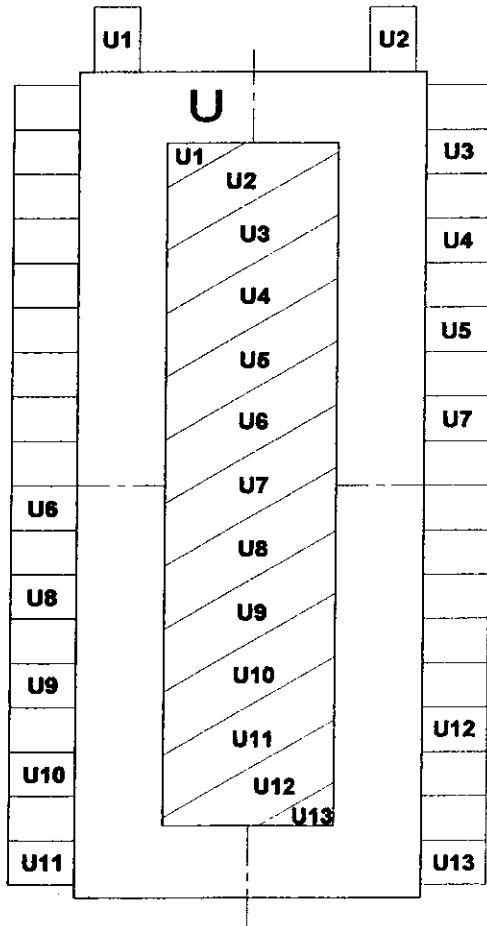
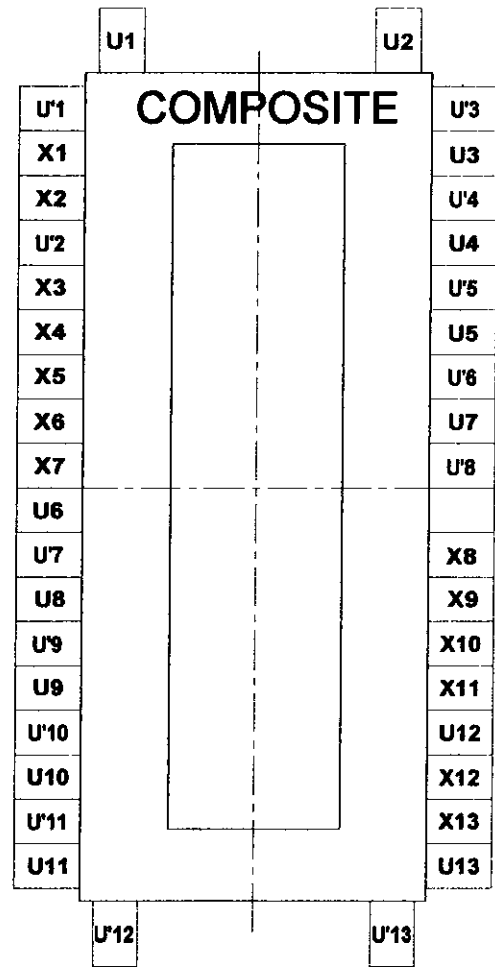
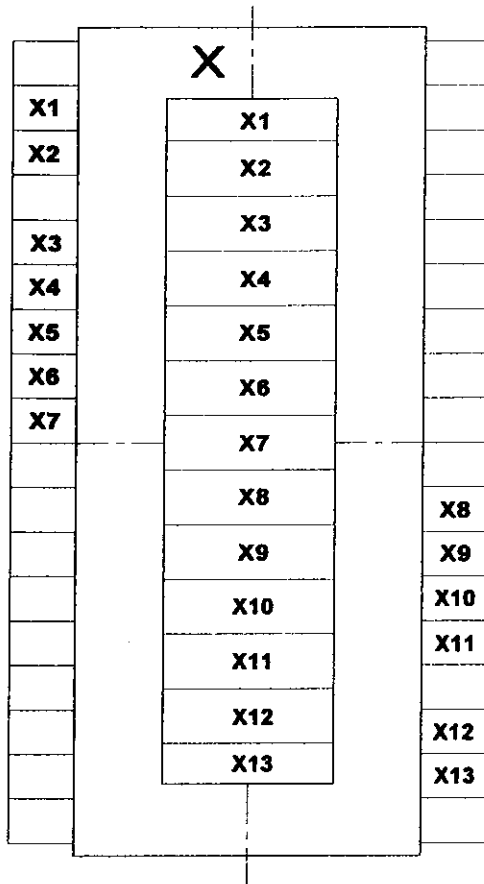


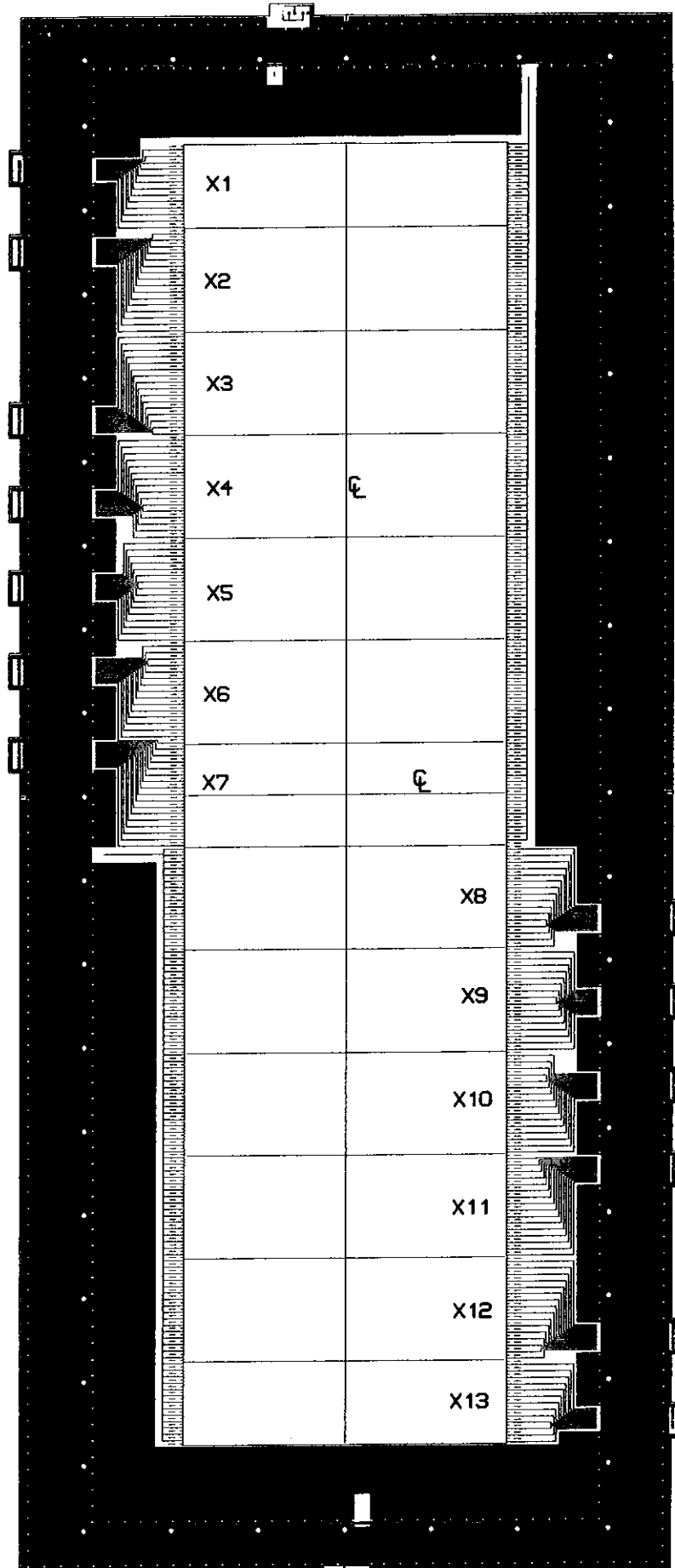
BBC 2 ENDPLATE: DIMENSIONS

MATERIAL: 3/8" THICK ALUMINUM PLATE



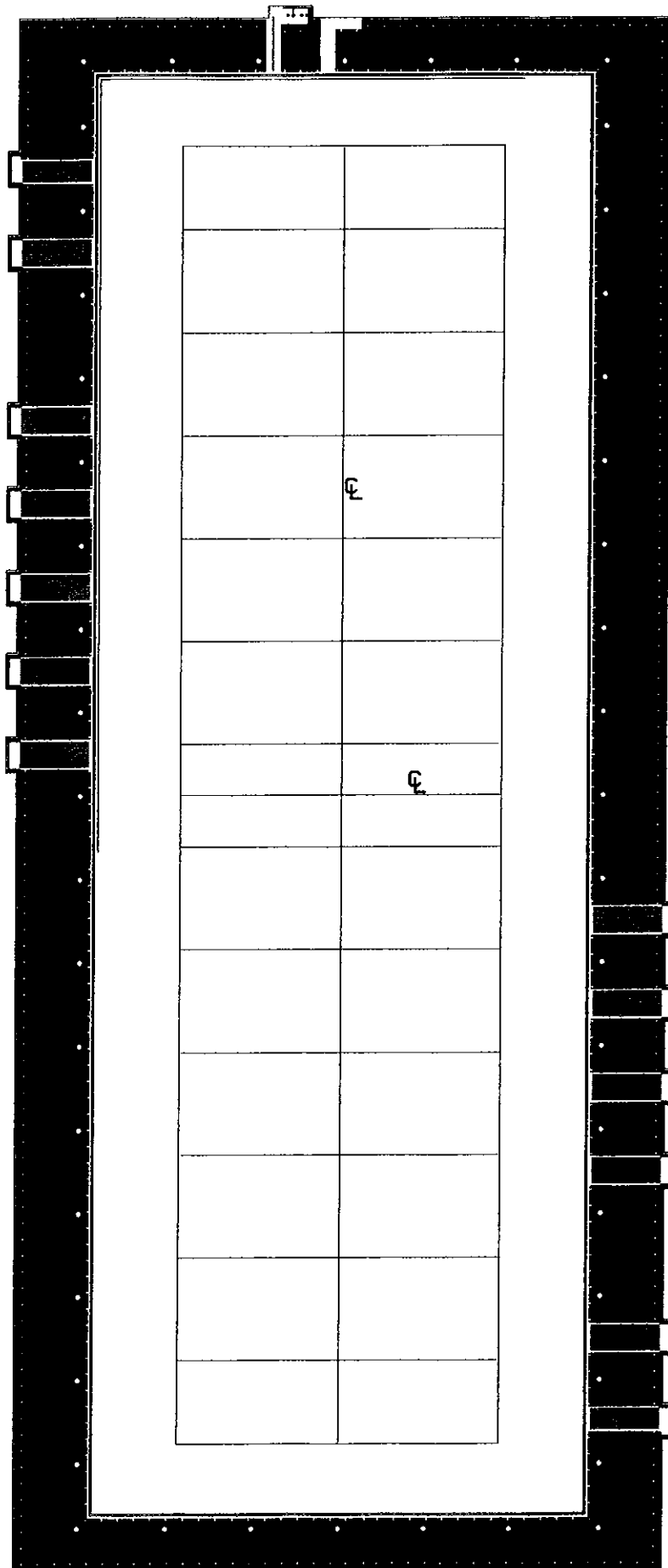
BBC2 WIRE GROUP ORGANIZATION: OVERVIEW





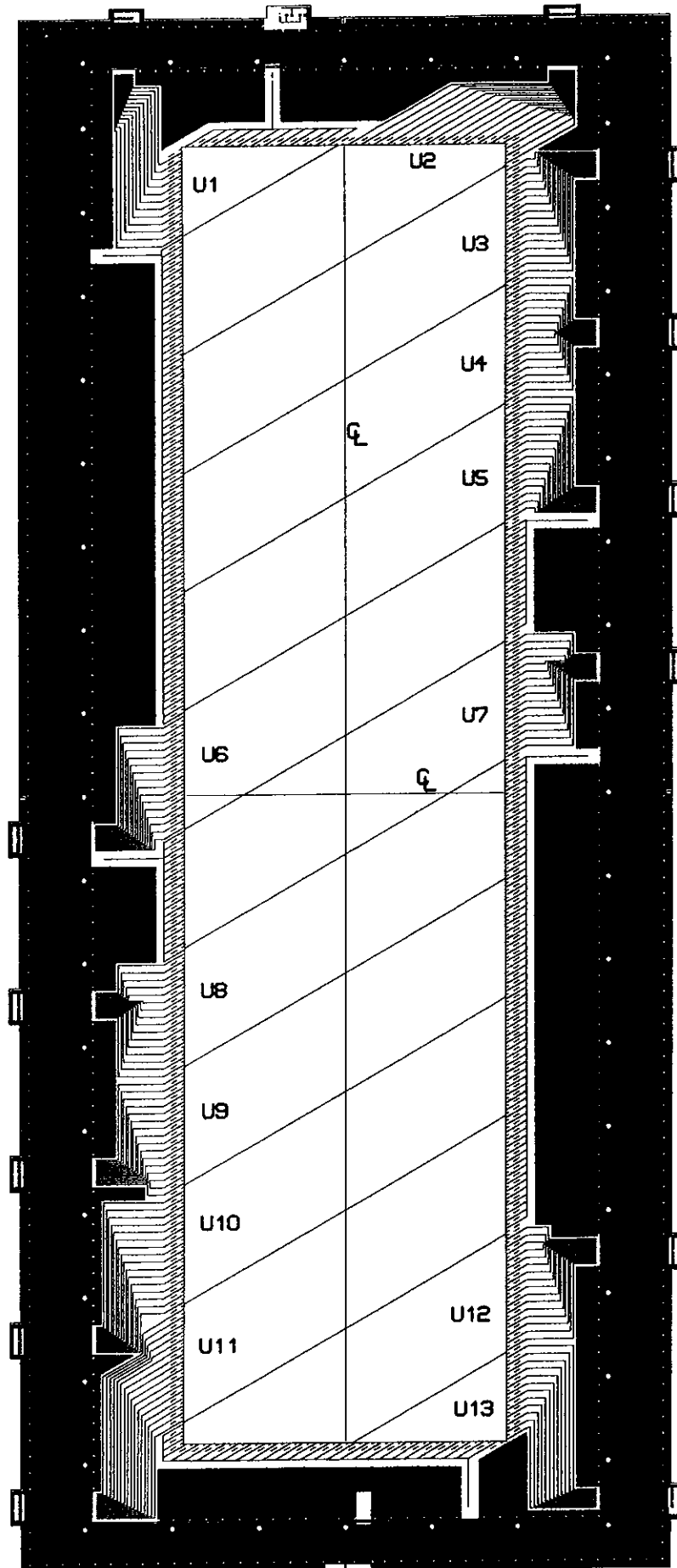
X-PLANE: SIDE B

SCALE= 1:10



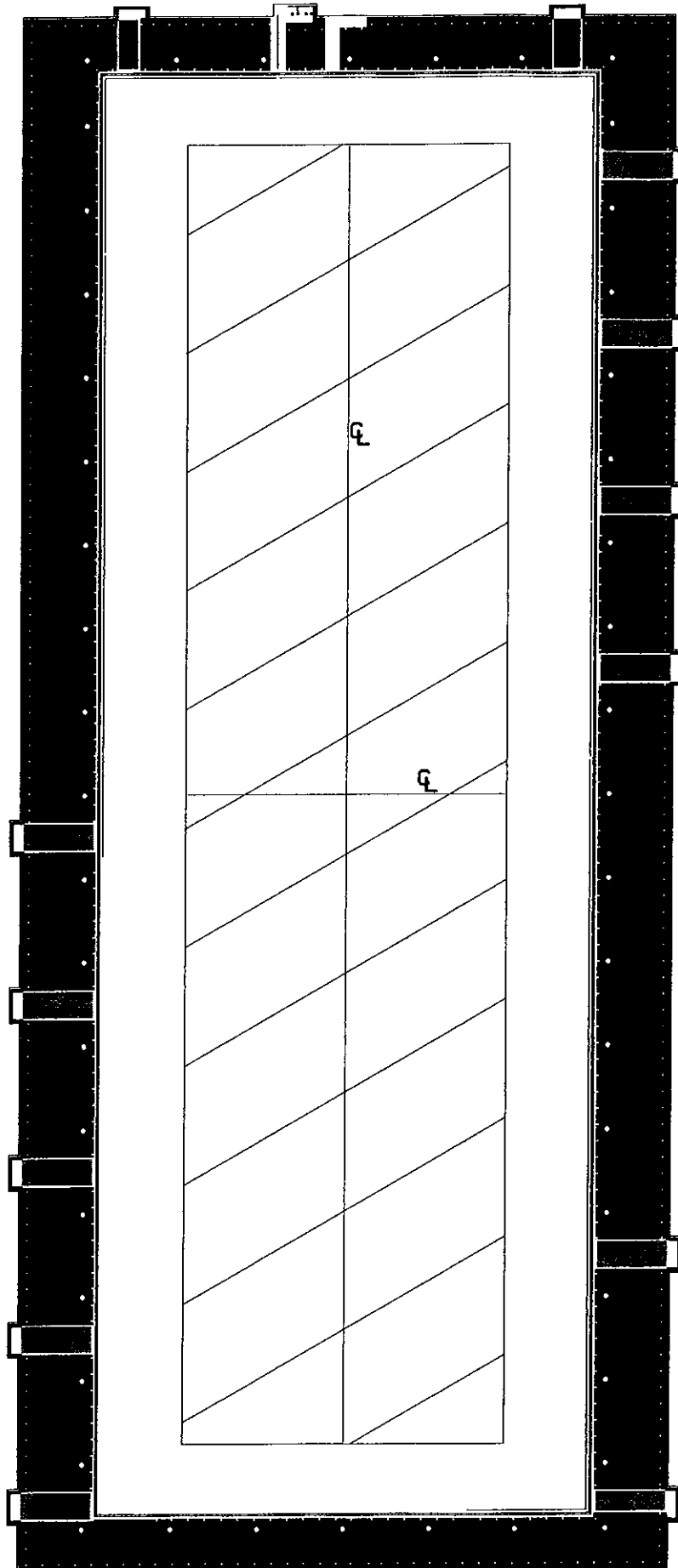
U-PLANE: SIDE A

SCALE= 1:10



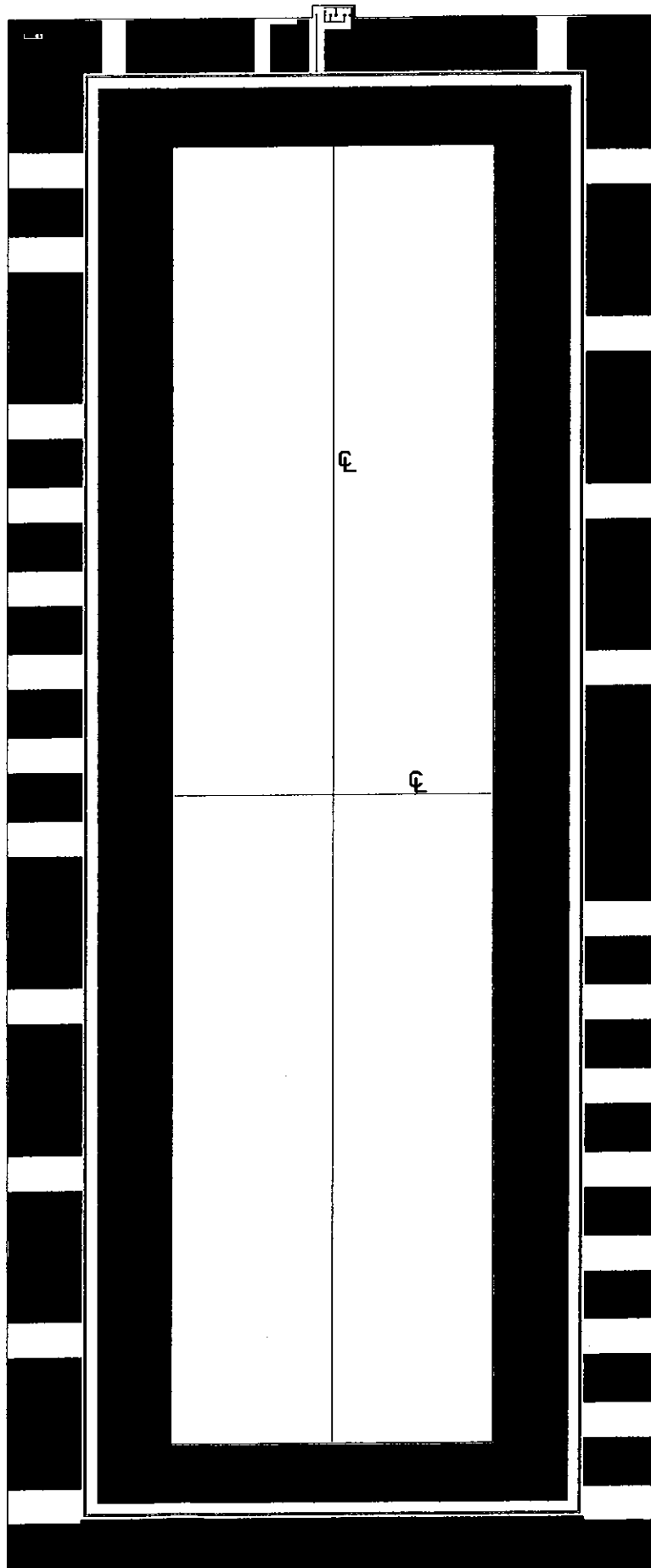
U-PLANE: SIDE B

SCALE= 1:10



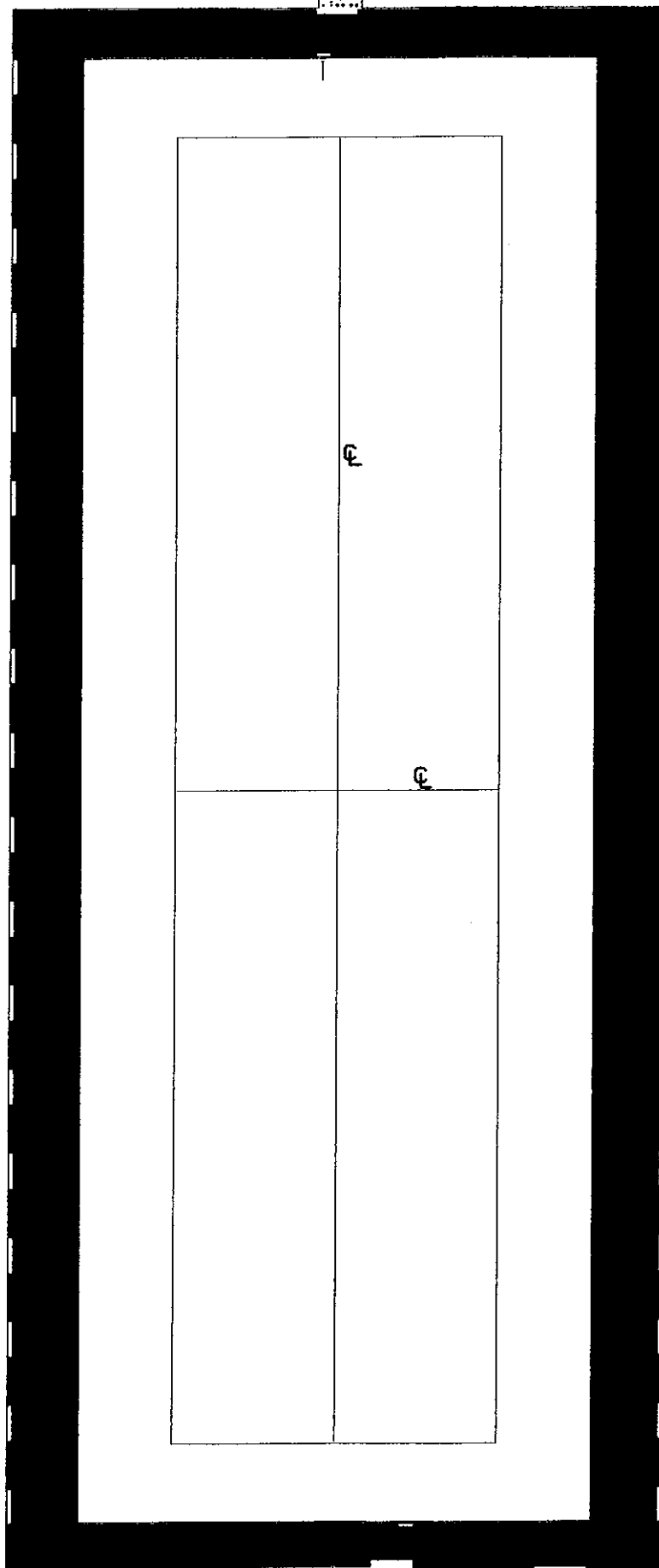
K-PLANE: SIDE A

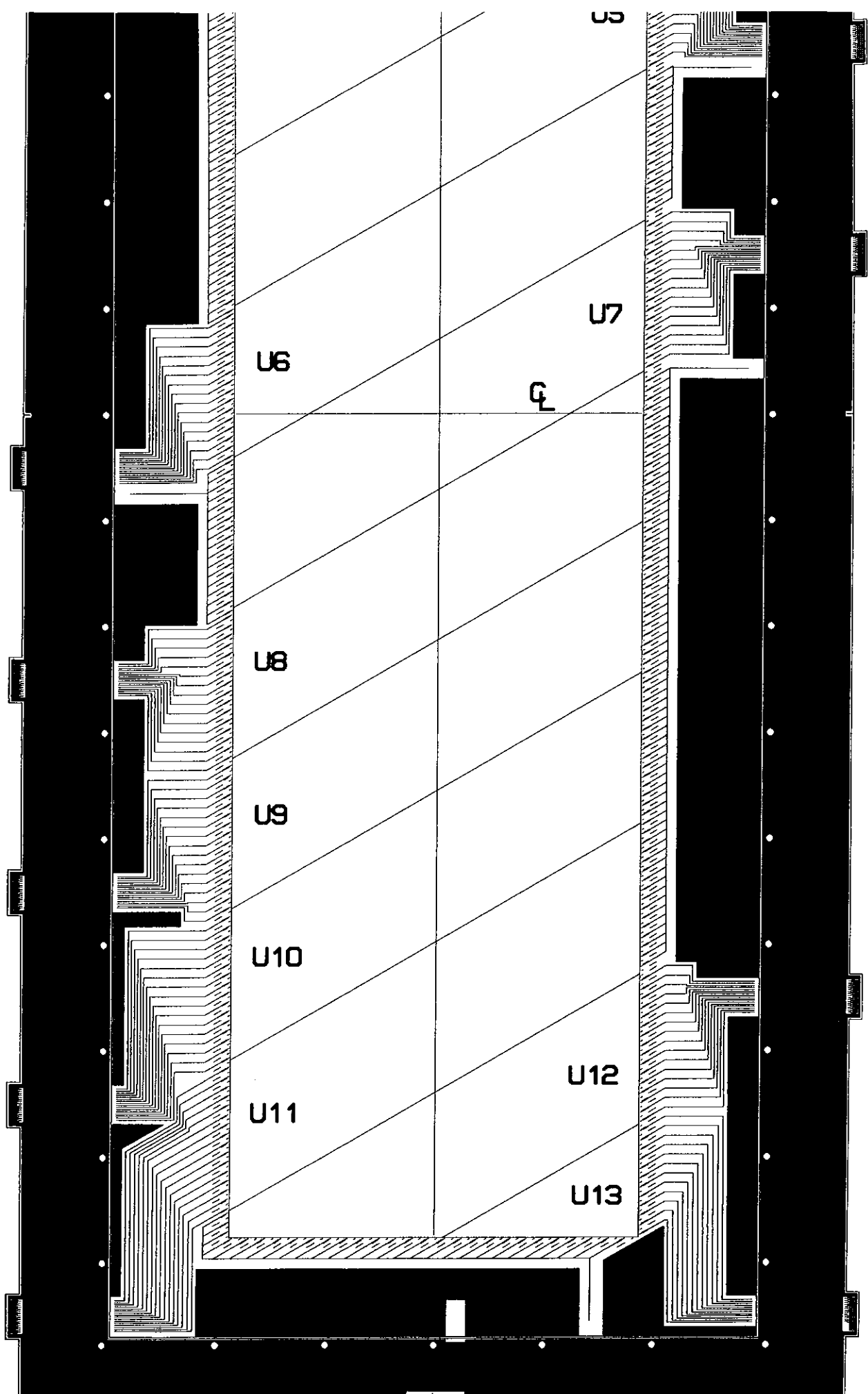
SCALE= 1:10



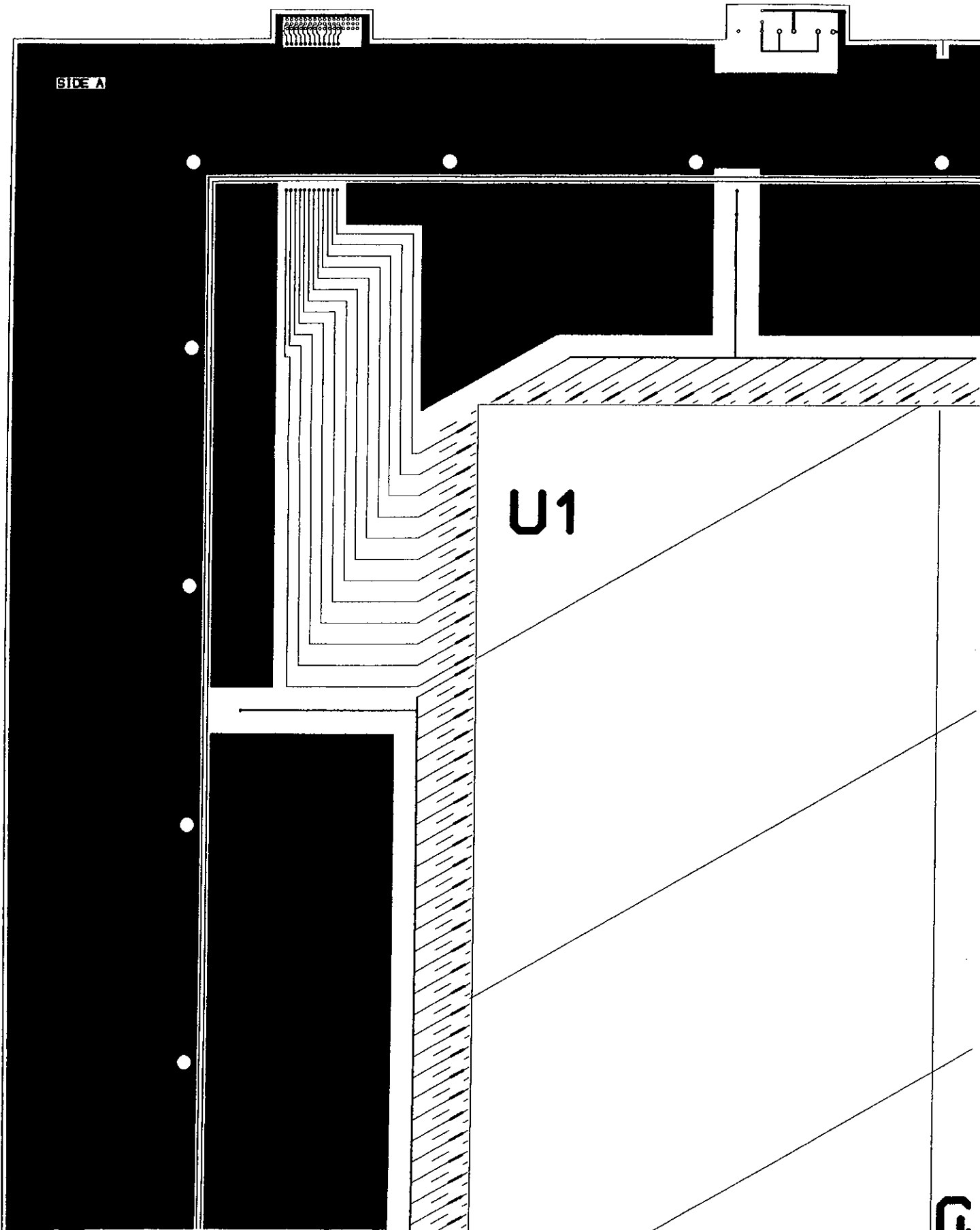
K-PLANE: SIDE B

SCALE= 1:10



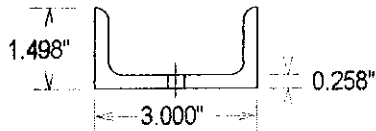


U-PLANE :

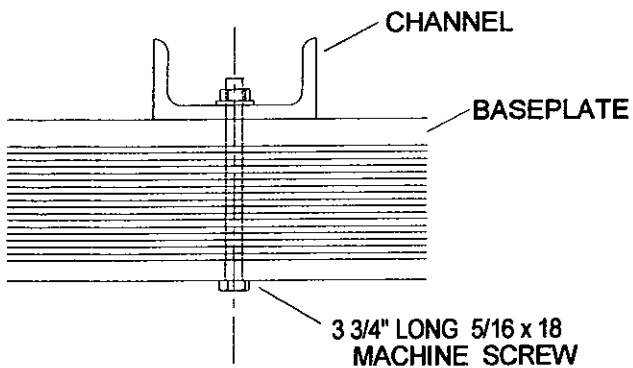


3" ALUMINUM REINFORCING CHANNEL

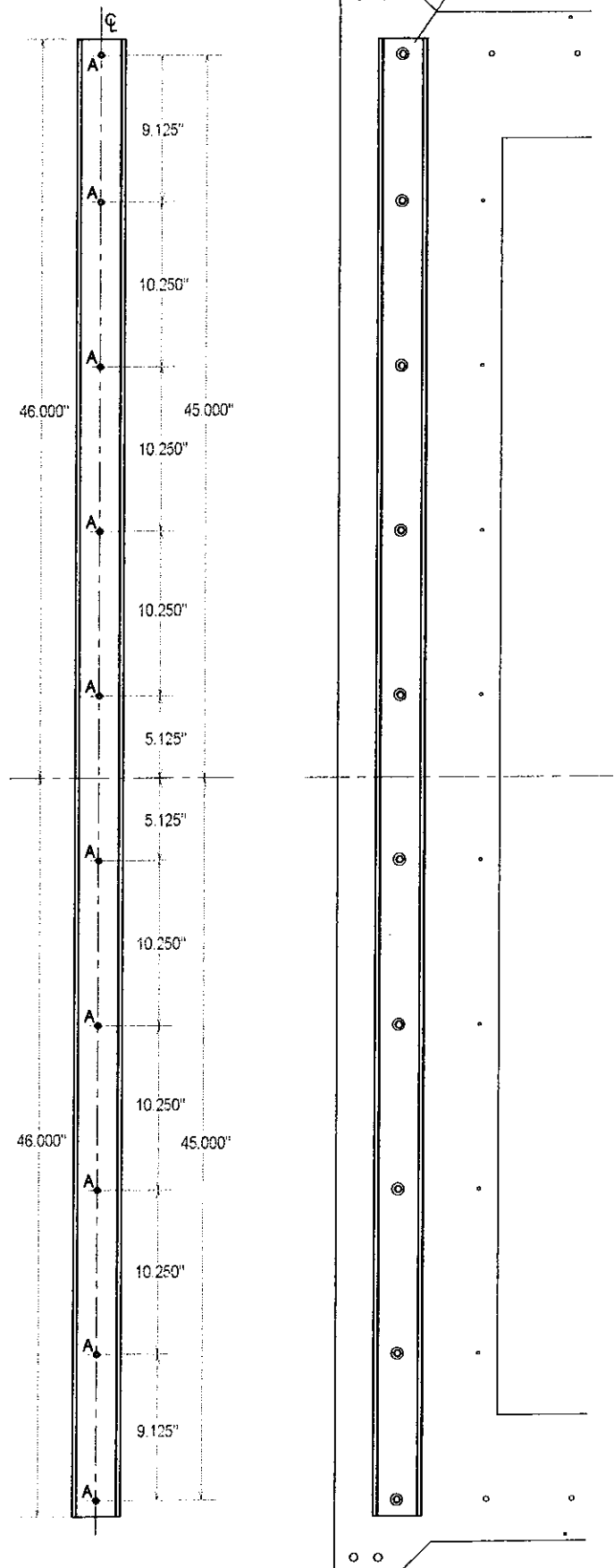
CHANNEL
CROSS-SECTION



REINFORCING CHANNEL MOUNTED TO BASEPLATE
USING EXTENDED LENGTH ASSEMBLY BOLTS



CHANNEL MOUNTED
ON BASEPLATE

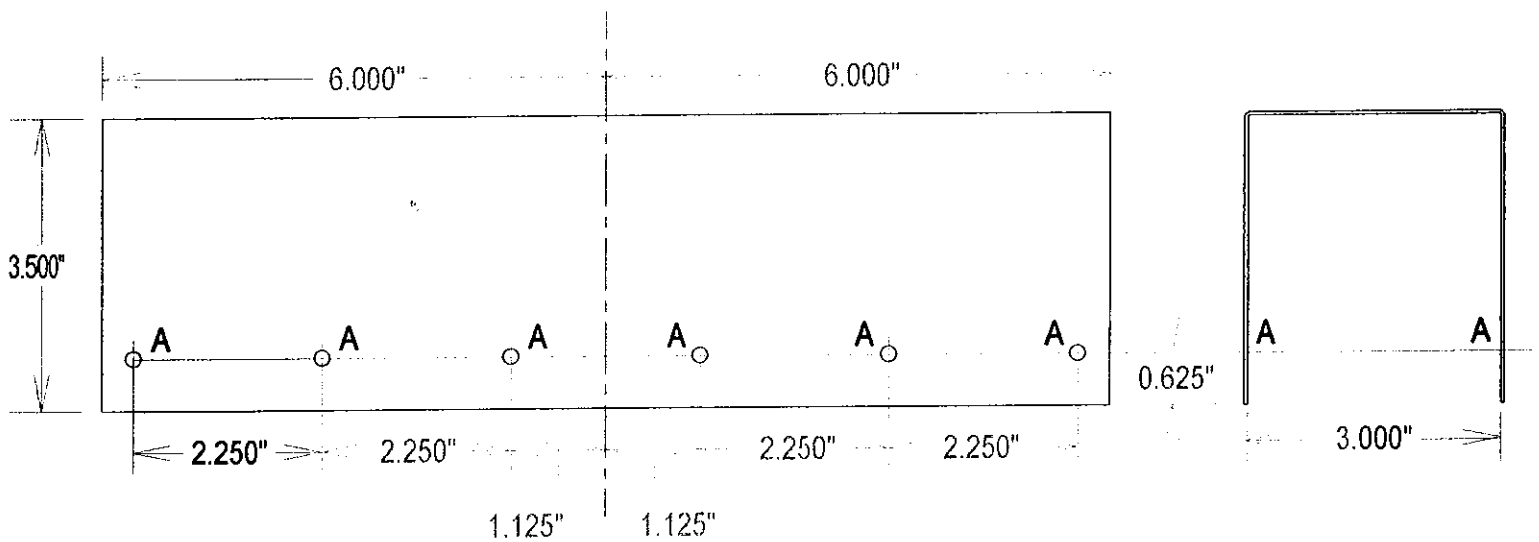


HV PROTECTIVE SHIELD

MATERIAL: .040" ALUMINUM SHEET

QUANTITY REQUIRED: 2

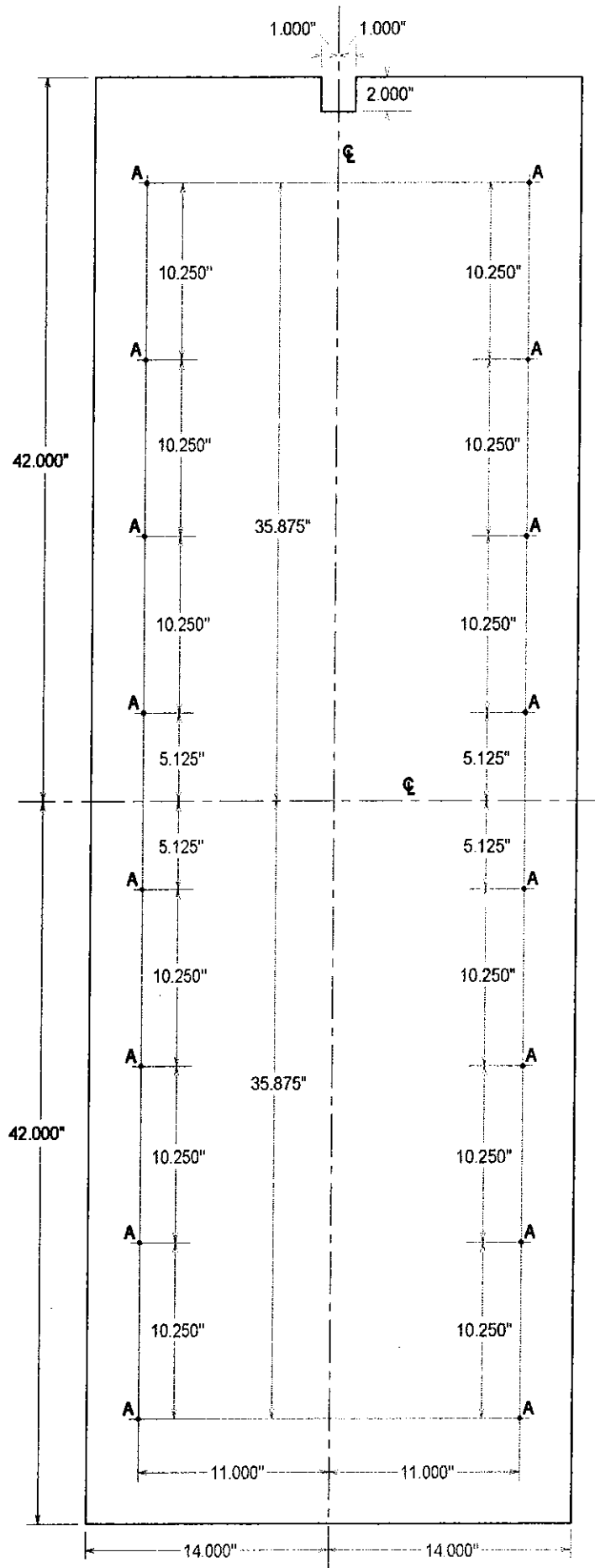
HOLE SPECIFICATIONS: A = CLEARANCE FOR 10-32 MACHINE SCREW



PROTECTIVE WINDOW COVER

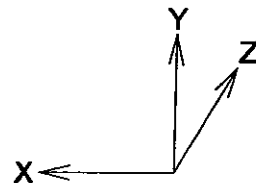
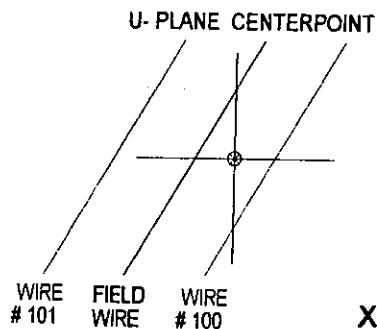
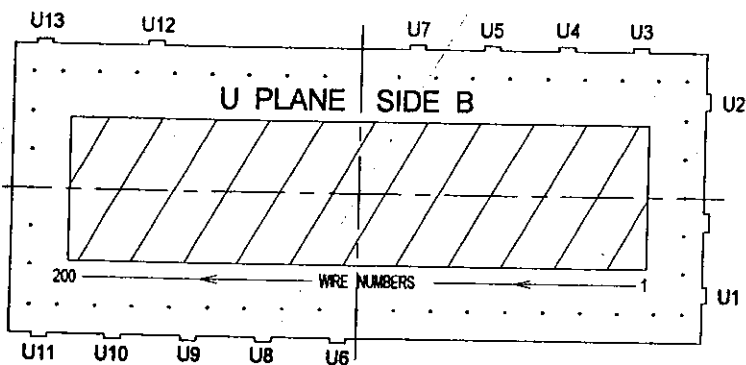
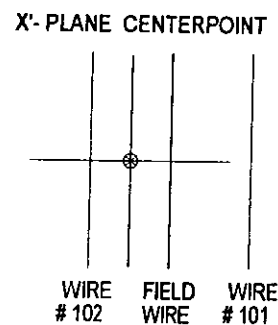
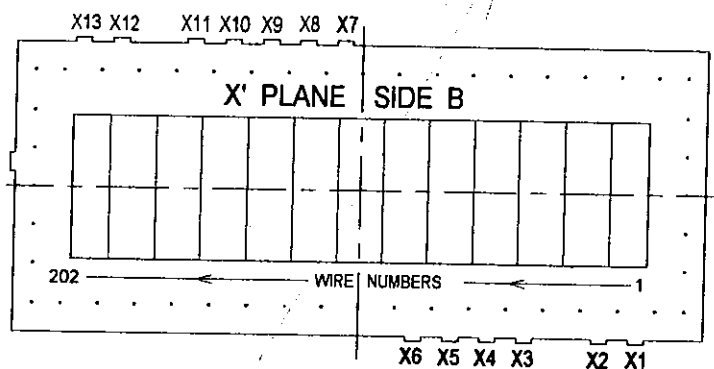
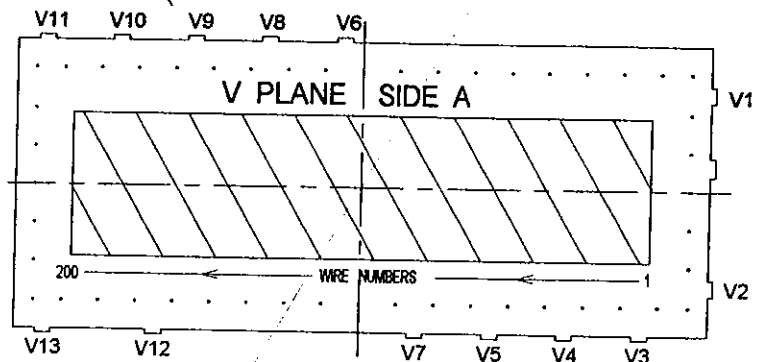
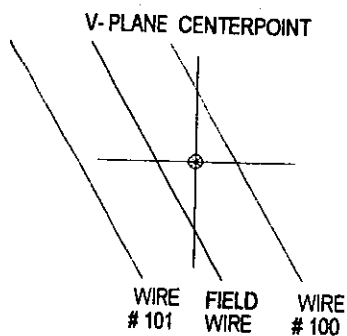
MATERIAL: 1/8" THICK ALUMINUM
OR PLASTIC SHEET

HOLES A: 0.225" DIAMETER

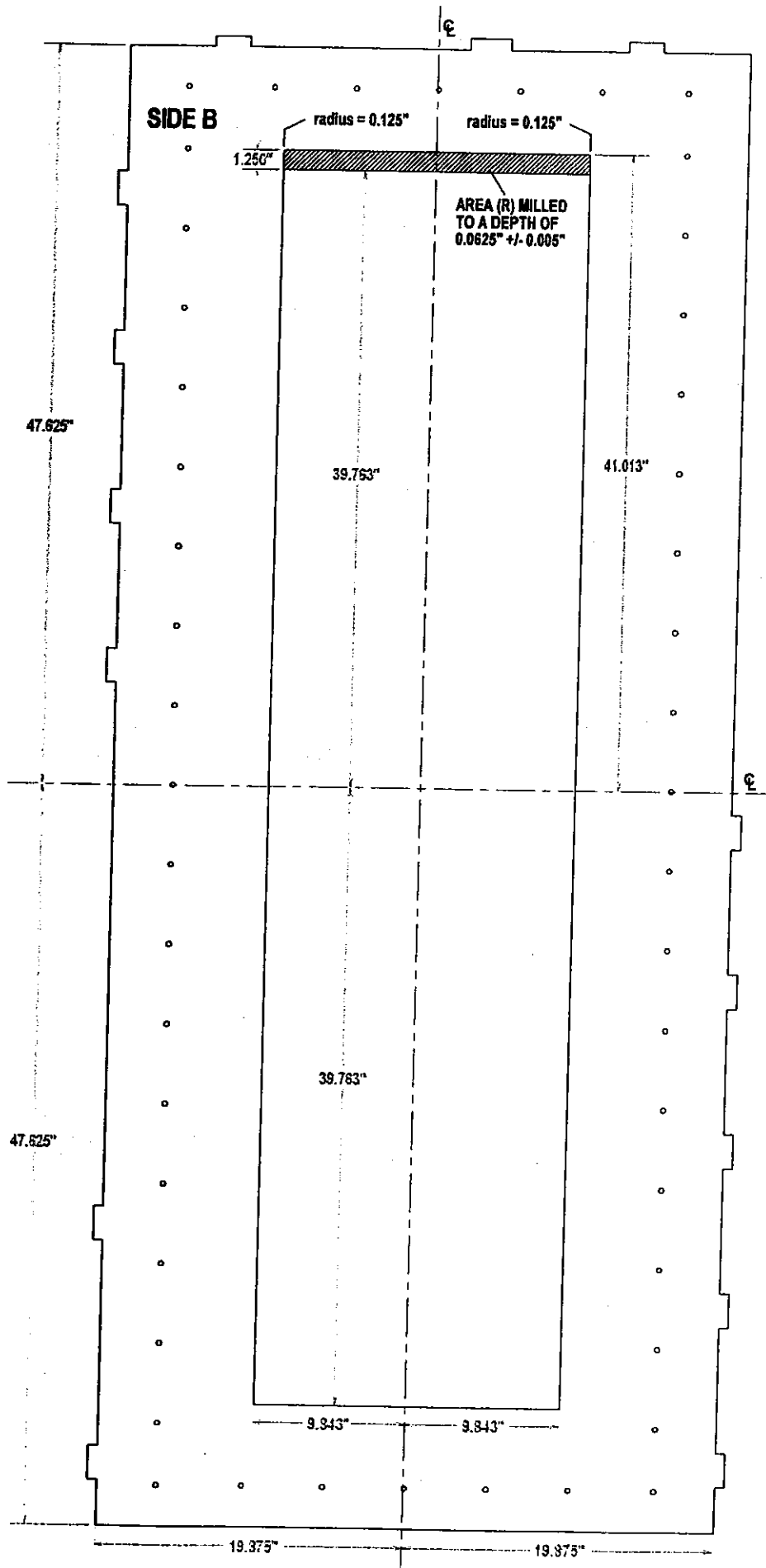


BBC2 WIRE PLANE GEOMETRY

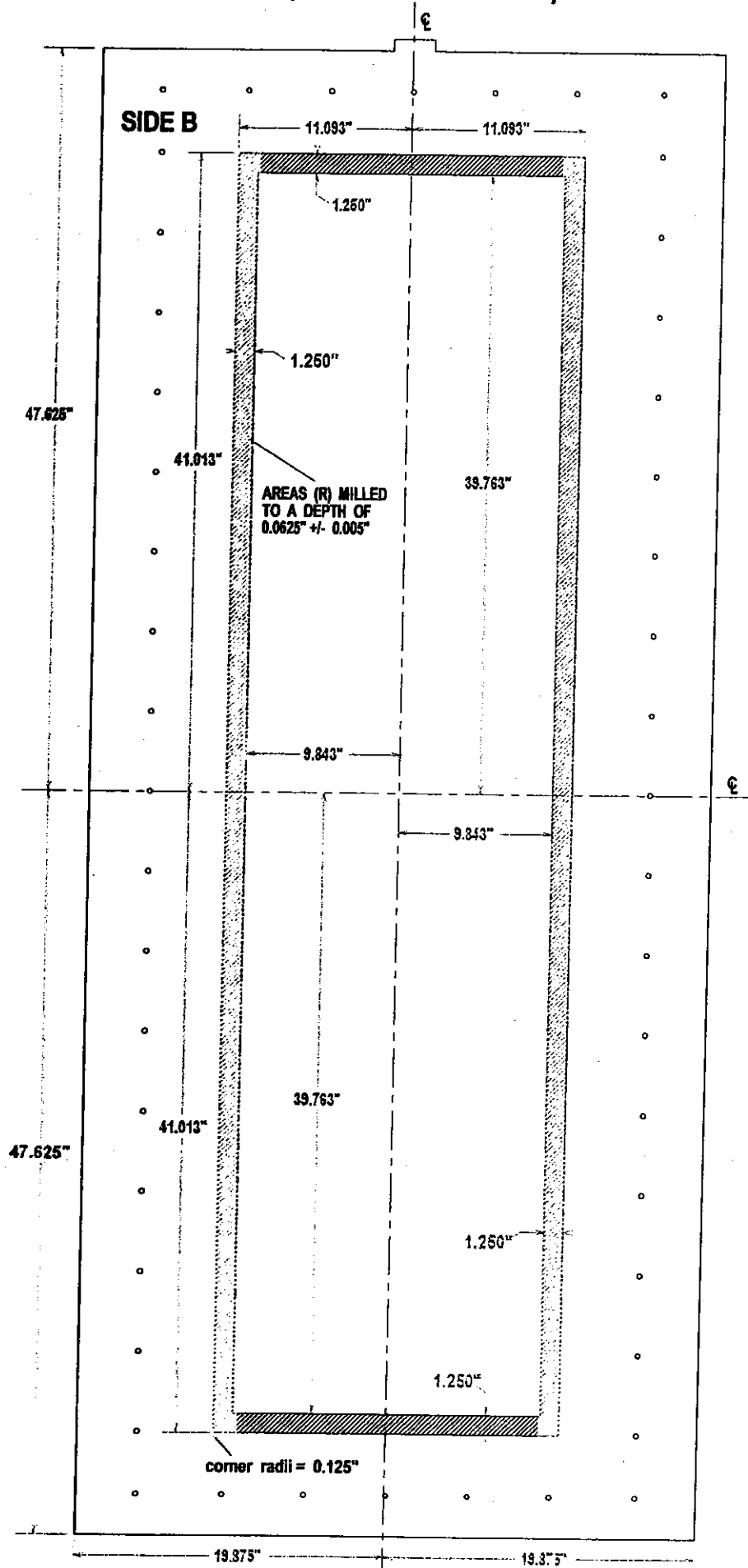
GREEN: A/D CHANNEL # INCREASES WITH INCREASING WIRE #
 RED: A/D CHANNEL # DECREASES WITH INCREASING WIRE #



U-PLANE PCB SIDE B: RELIEVED AREA - R
(R is SHADED AREA)



K-PLANE PCB SIDE B: RELIEVED AREAS - R
(R is SHADED AREAS)

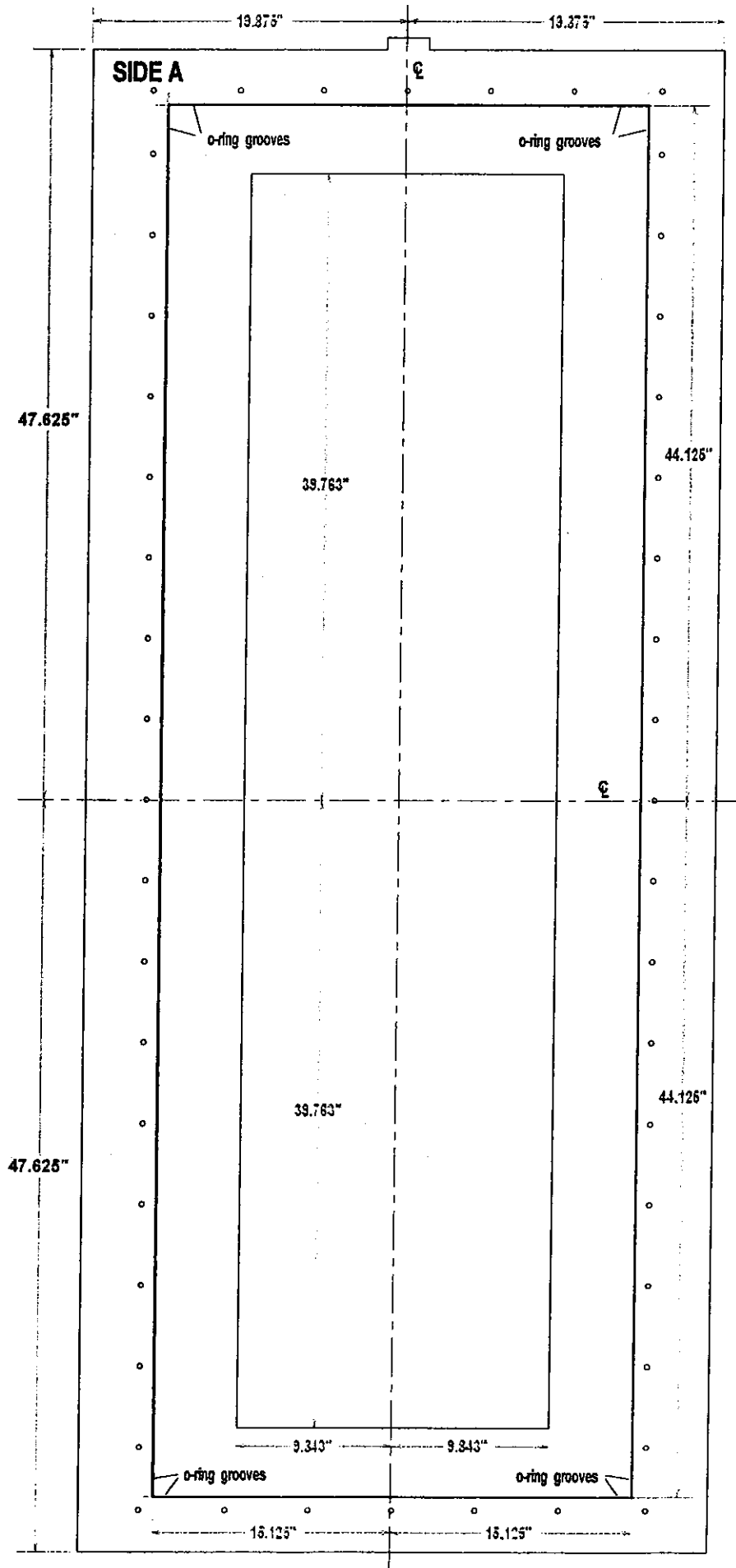


HOLE SPECIFICATION: A = 0.250" DIAMETER

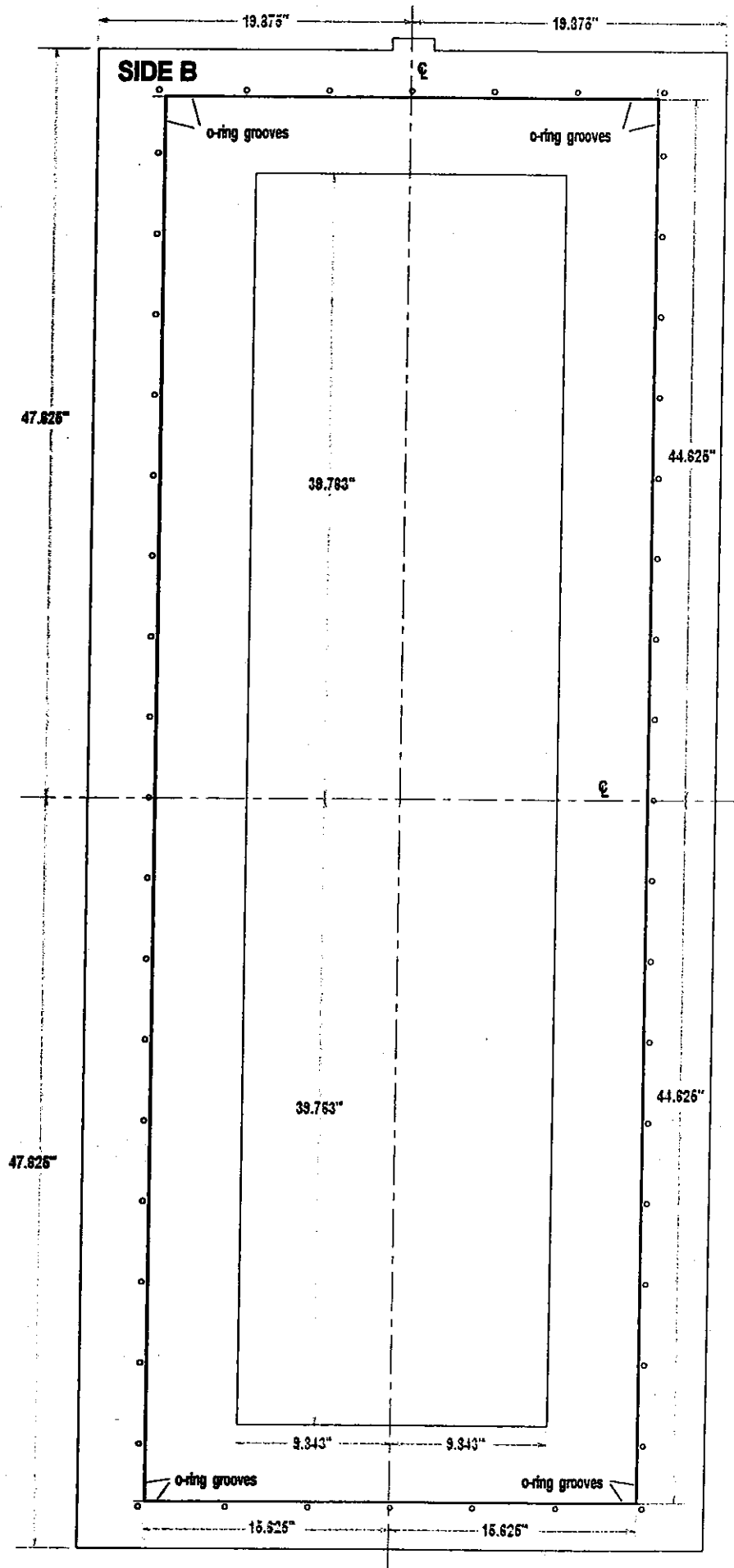
X = 2.250" SPACING



K-PLANE SIDE A O-RING GROOVES
CENTERLINE DIMENSIONS



K-PLANE SIDE B O-RING GROOVES
CENTERLINE DIMENSIONS



O-RING GROOVE DETAIL

$> 0.094''$

K-PCB
SIDE VIEW

$0.125''$

O-RING
GROOVE

$0.050'' \pm .003''$

corner radius

$r = 0.047''$

K-PCB
TOP VIEW

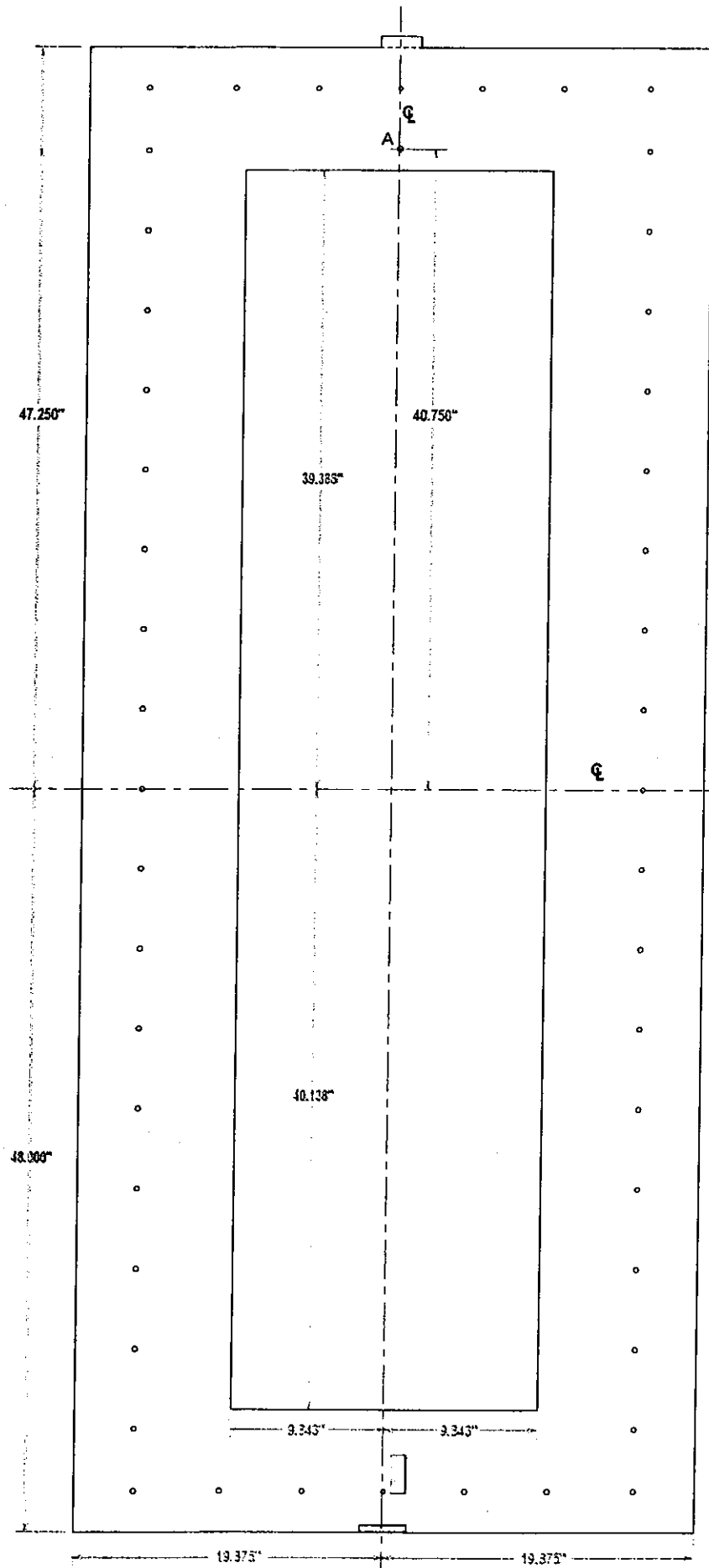
$0.094''$

$0.094''$

$3/32''$ DIA. END MILL

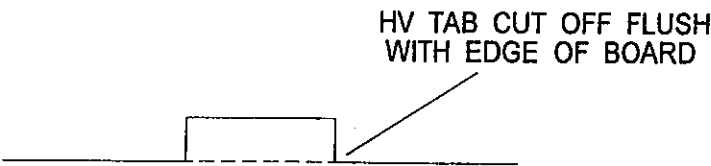
W-TYPE GAS WINDOW PCB MODIFICATIONS (SEE DETAIL)

HOLE SPECIFICATION: A = 3/8" DIAMETER

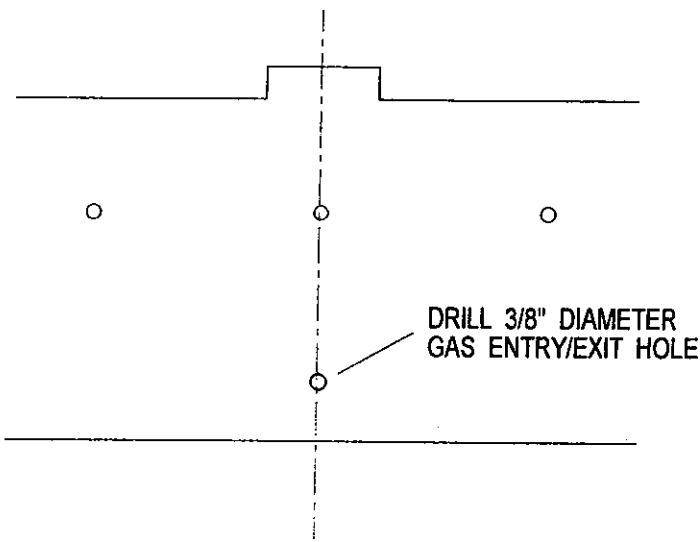


MODIFICATIONS TO W-TYPE GAS WINDOW BOARD

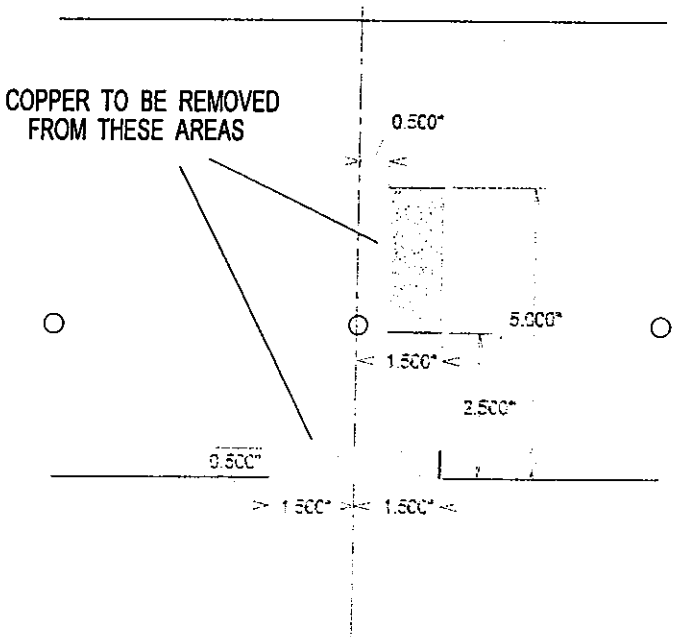
1)



2)



3)



BBC 2 ENDPLATE: HOLE SPECIFICATIONS

DIMENSIONS

X= 1.125"

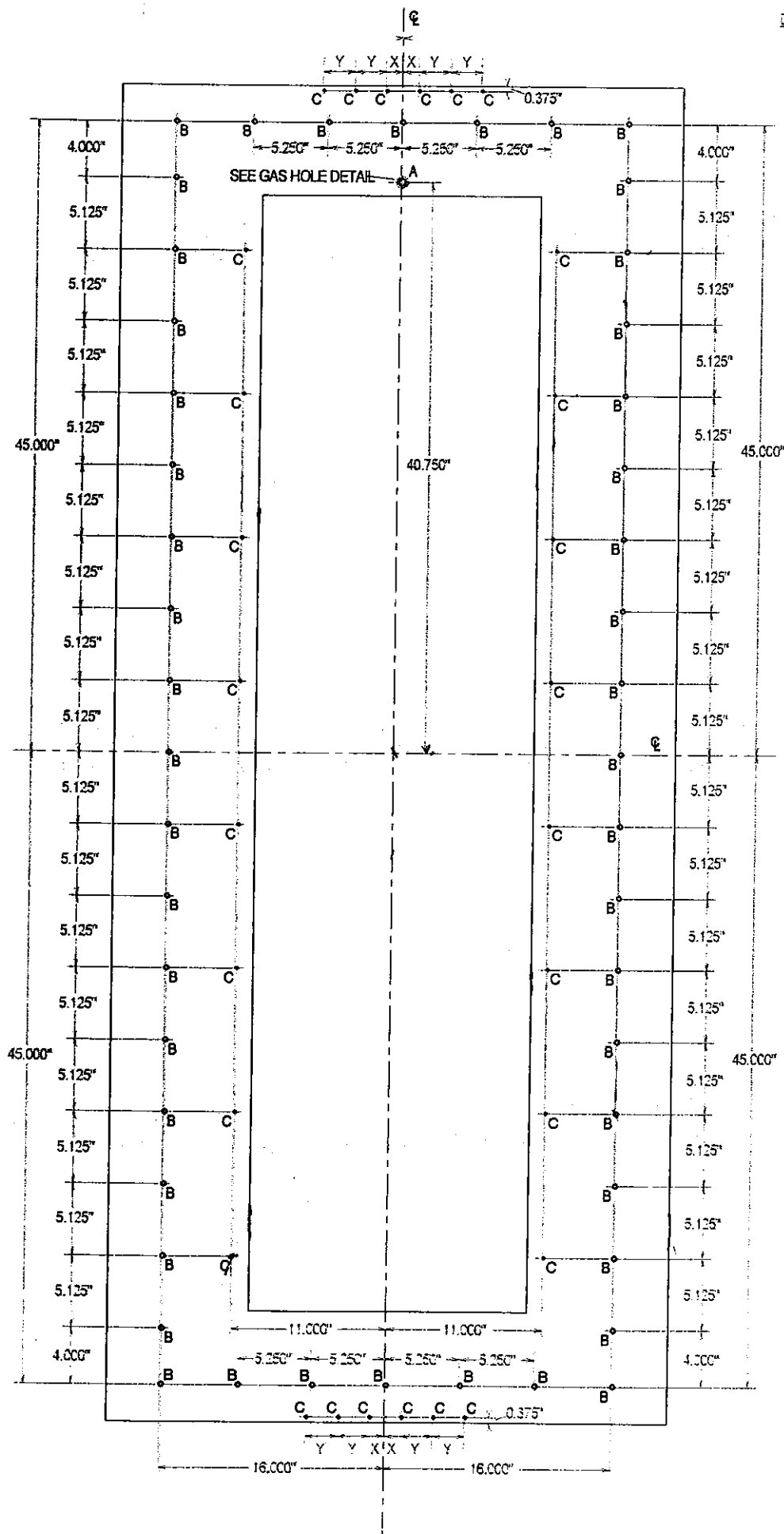
Y= 2.250"

HOLES

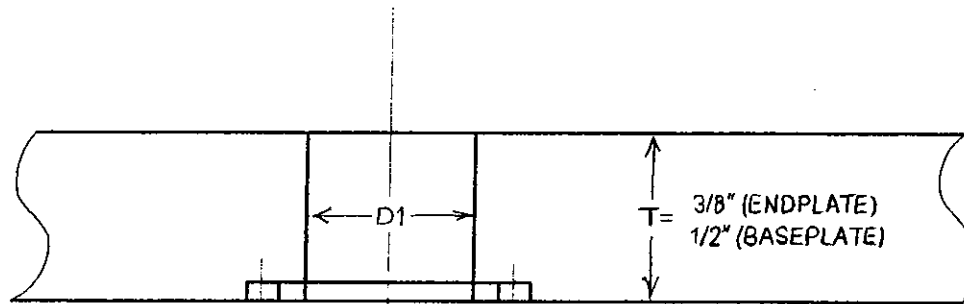
A: SEE GAS HOLE DETAIL

B: CLEARANCE HOLE FOR
5/16" x 18 MACHINE SCREW

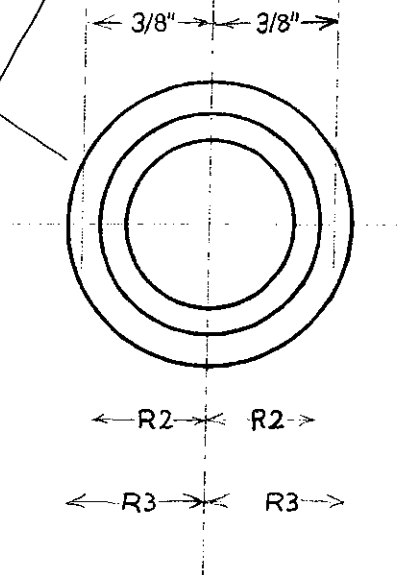
C: DRILLED and TAPPED FOR
10 x 32 MACHINE SCREW



GAS HOLE DETAIL



O-RING GROOVE FOR 3/4" DIAMETER
CIRCULAR O-RING WITH 0.070"
CROSS-SECTIONAL DIAMETER

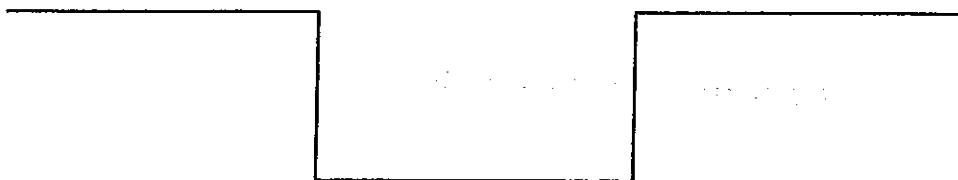


D1: THREADED HOLE FOR STANDARD
GAS FITTING. MAXIMUM DIA. = 1/2"

R2: 0.328" +/- .002"

R3: 0.422" +/- .002"

O-RING GROOVE CROSS-SECTION

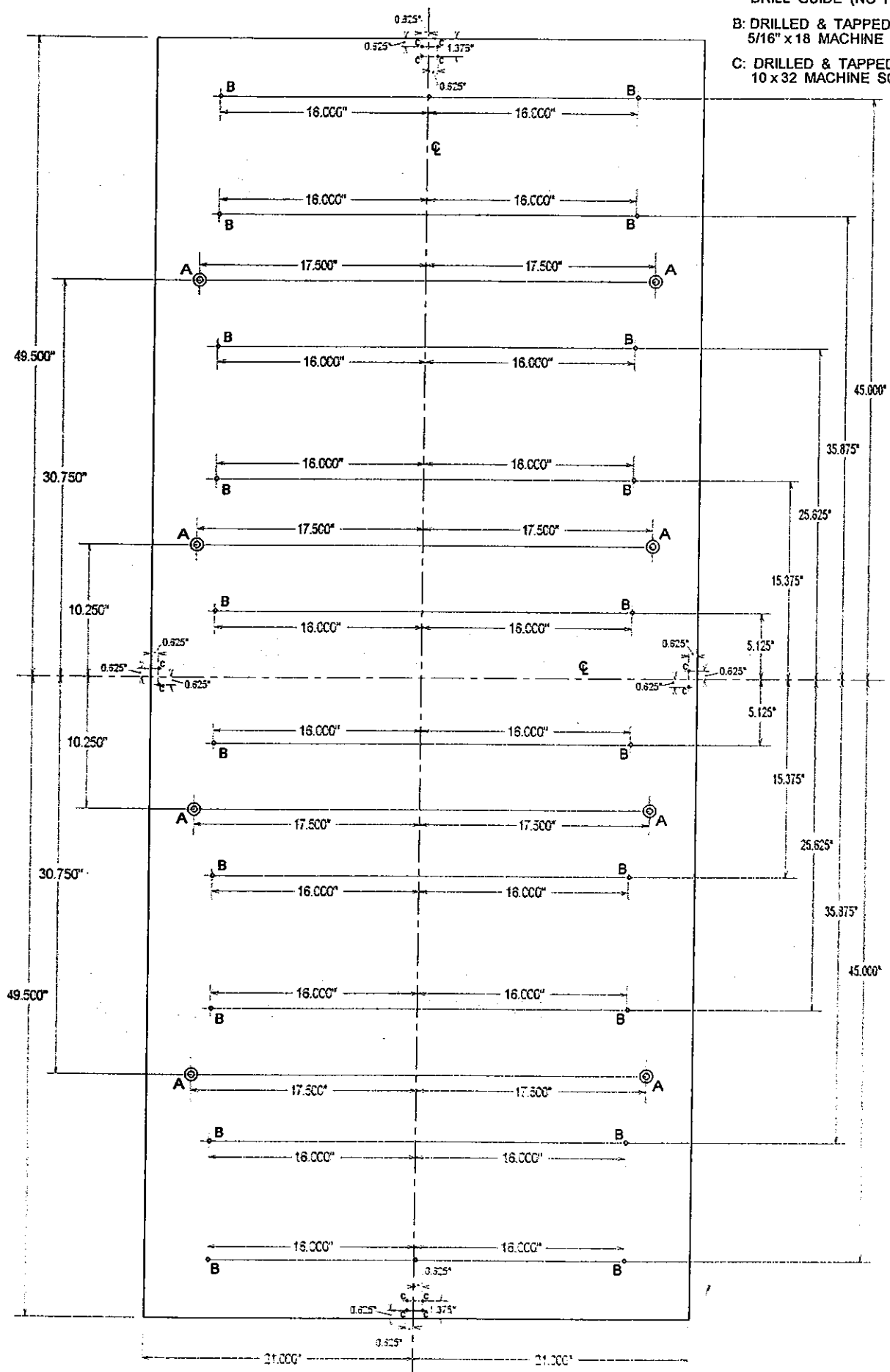


ALIGNMENT PIN DRILLING TEMPLATE

MATERIAL: 1/2" THICK ALUMINUM PLATE

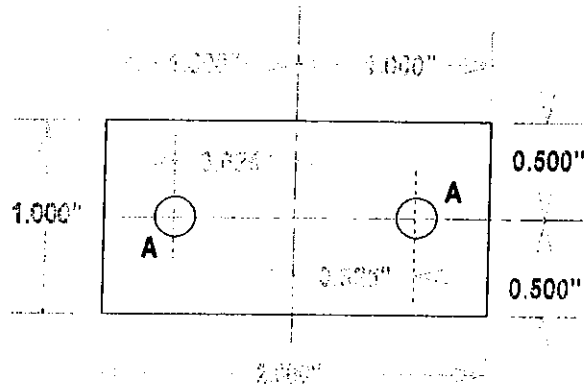
HOLE SPECIFICATIONS

- A: DRILLED TO FIT 1/2" ID
DRILL GUIDE (NO HEAD)
- B: DRILLED & TAPPED FOR
5/16" x 18 MACHINE SCREW
- C: DRILLED & TAPPED FOR
10 x 32 MACHINE SCREW



ALIGNMENT TAB

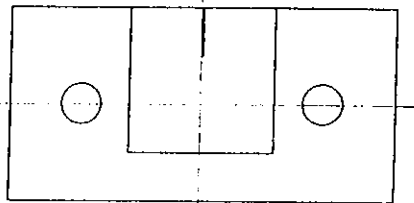
MATERIAL: 1/8" THICK ALUMINUM



HOLE A: 0.210" DIAMETER

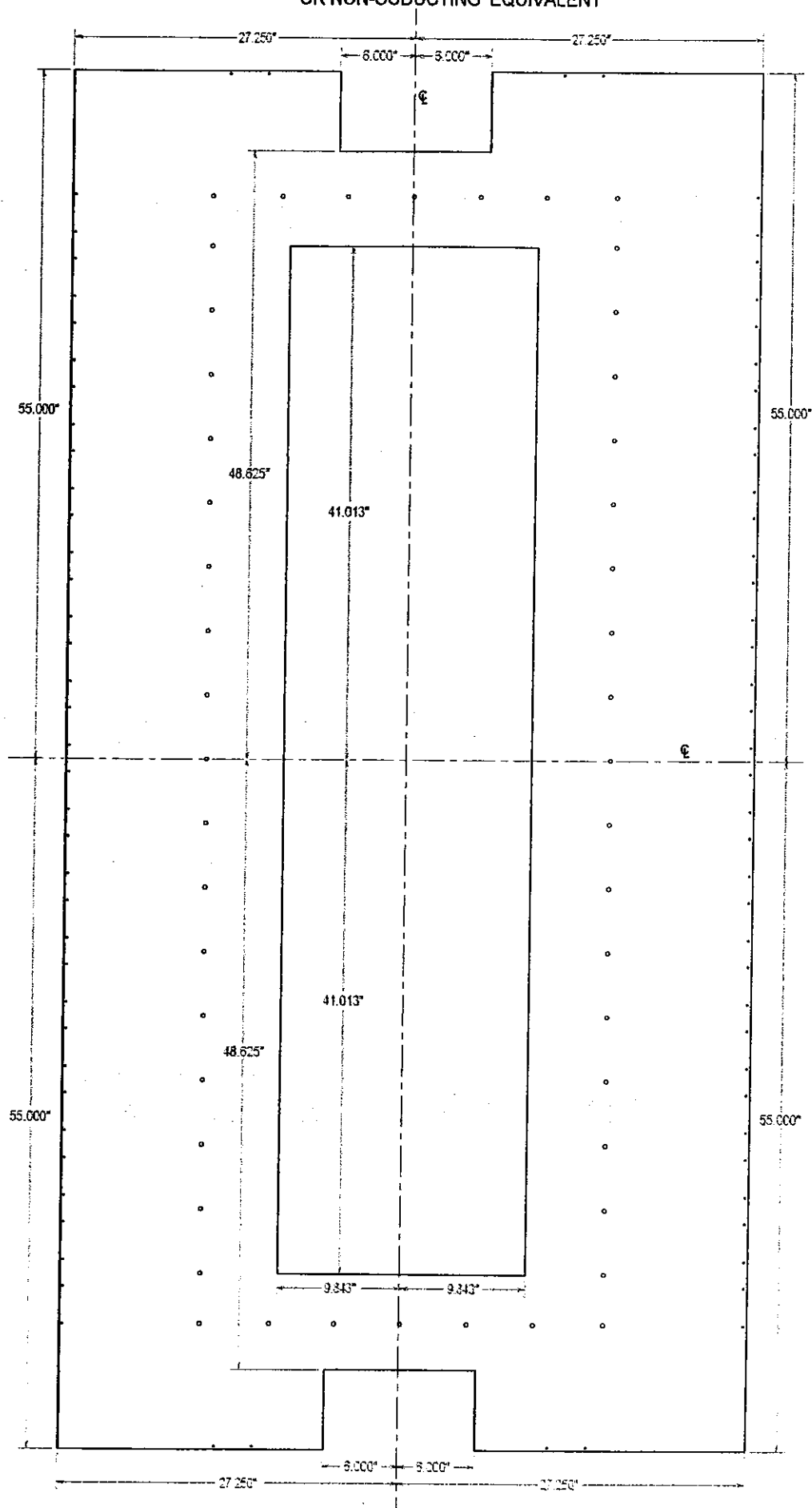
CLEARANCE FOR 10/32
MACHINE SCREW + 0.025"

ALIGNMENT TAB WITH ATTACHED FIDUCIAL MARKER



BBC 2 AMPLIFIER-DISCRIMINATOR SUPPORT BOARD: DIMENSIONS

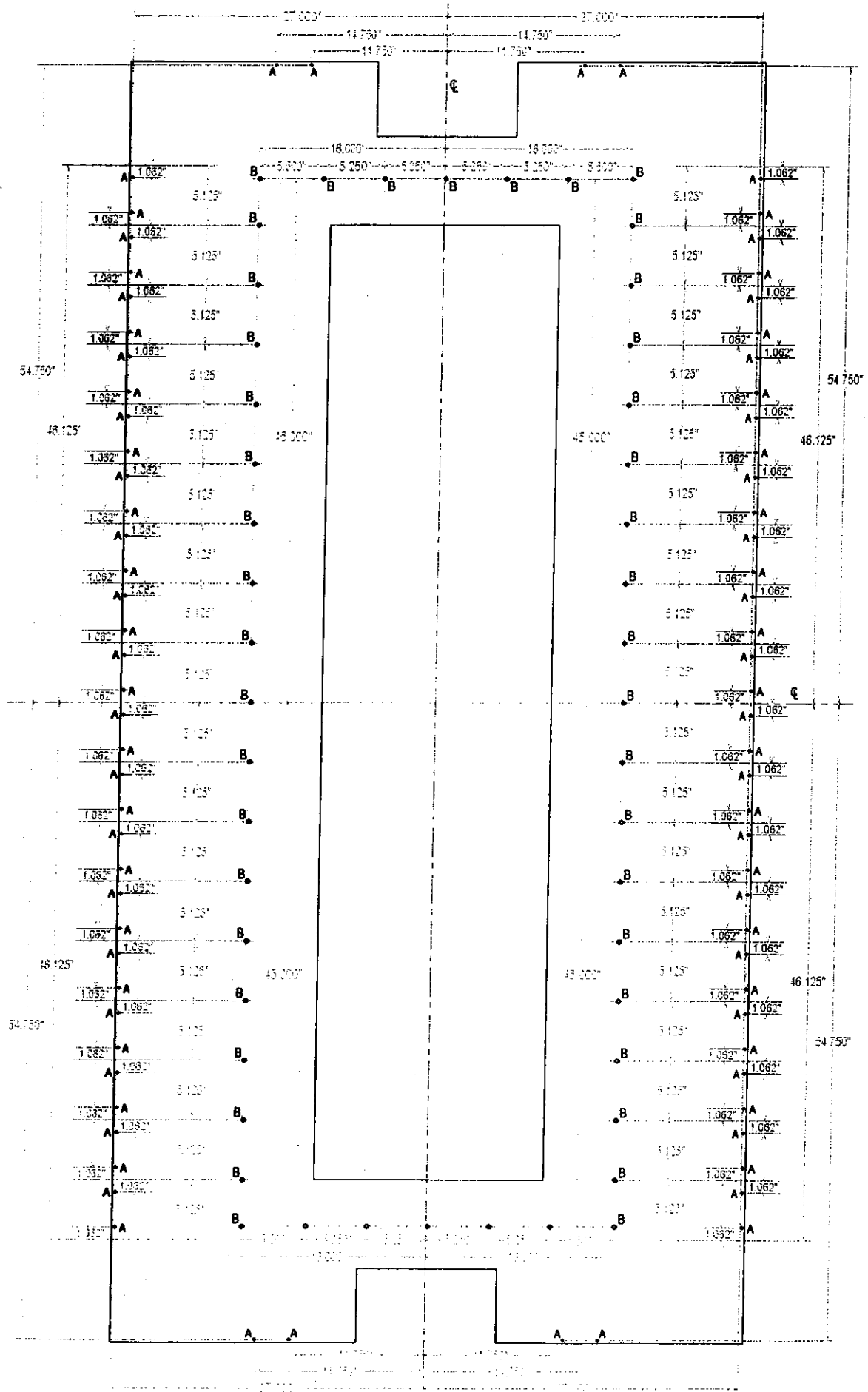
MATERIAL: 1/8" THICK FR4 OR G10 SHEET
OR NON-CONDUCTING EQUIVALENT



BBC 2 AMPLIFIER-DISCRIMINATOR SUPPORT BOARD: HOLE SPECIFICATIONS

HOLES A: CLEARANCE FOR 8-32 MACHINE SCREW

B: 0.0330" DIAMETER

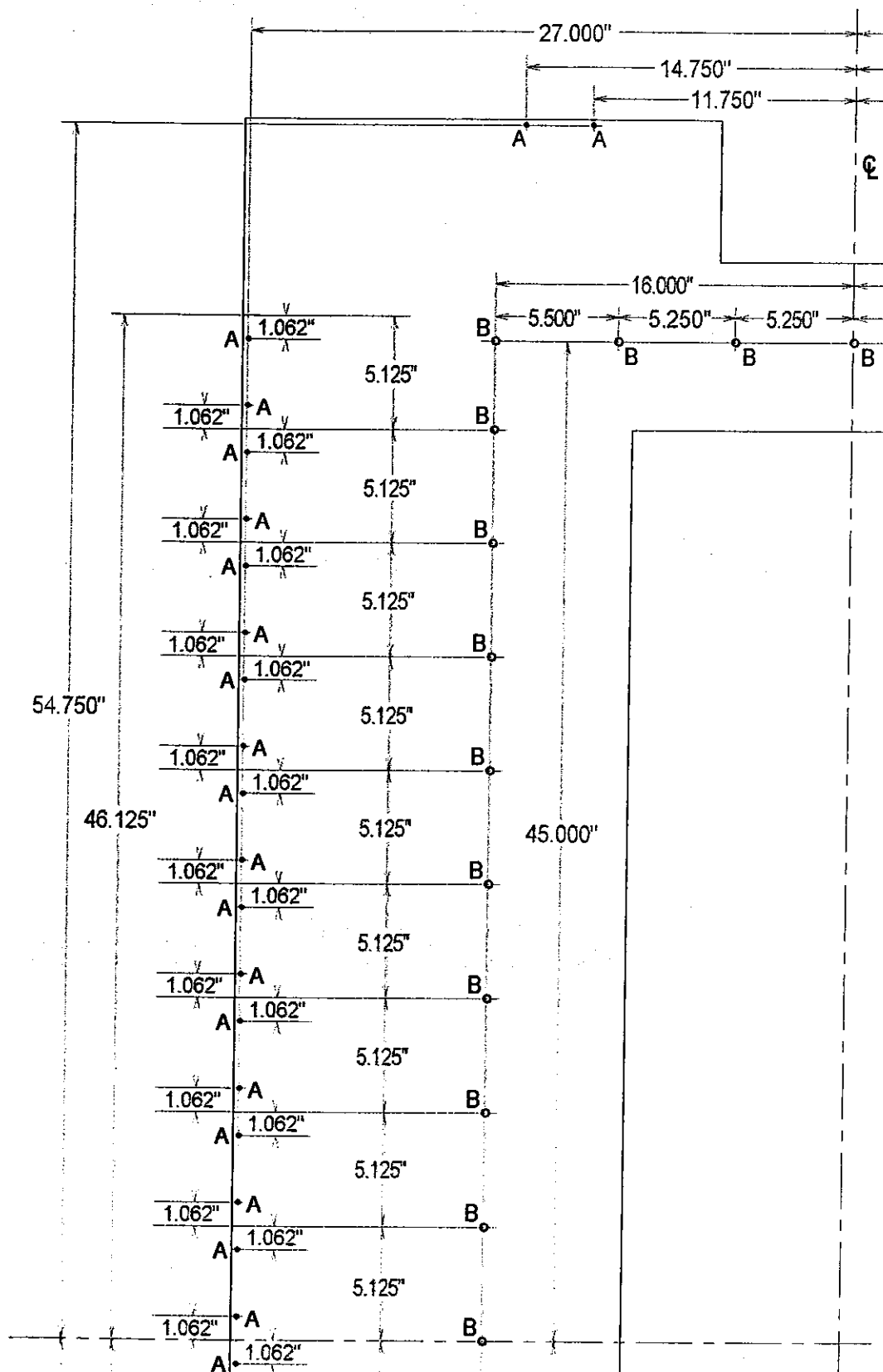


BBC 2 AMPLIFIER-DISCRIMINATOR SUPPORT BOARD: HOLE SPECIFICATIONS

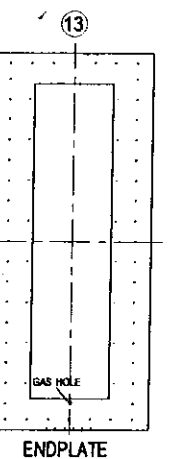
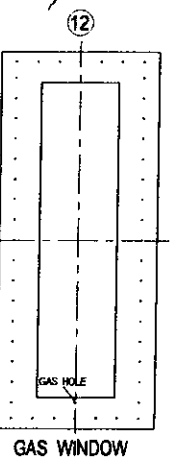
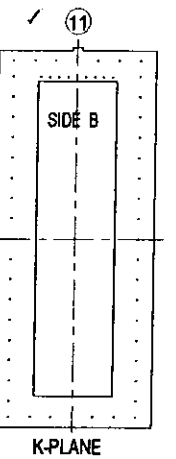
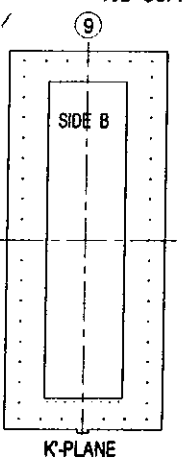
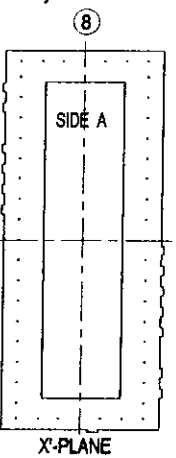
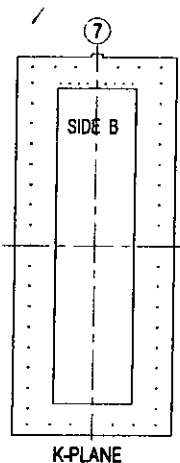
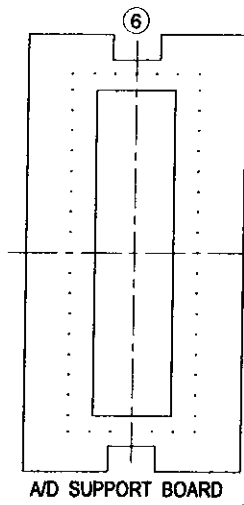
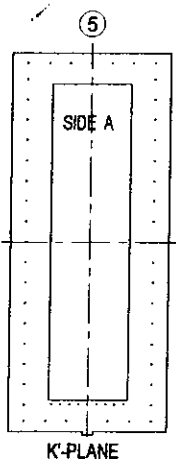
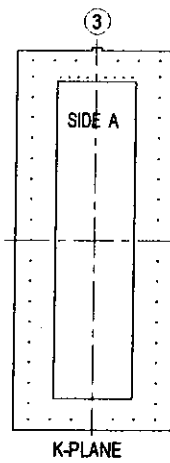
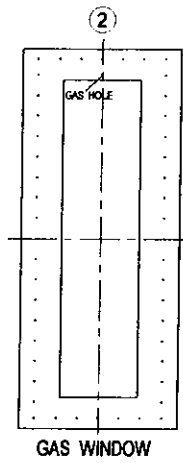
UPPER LEFT QUADRANT

HOLES A: CLEARANCE FOR 8-32 MACHINE SCREW

B: 0.330" DIAMETER

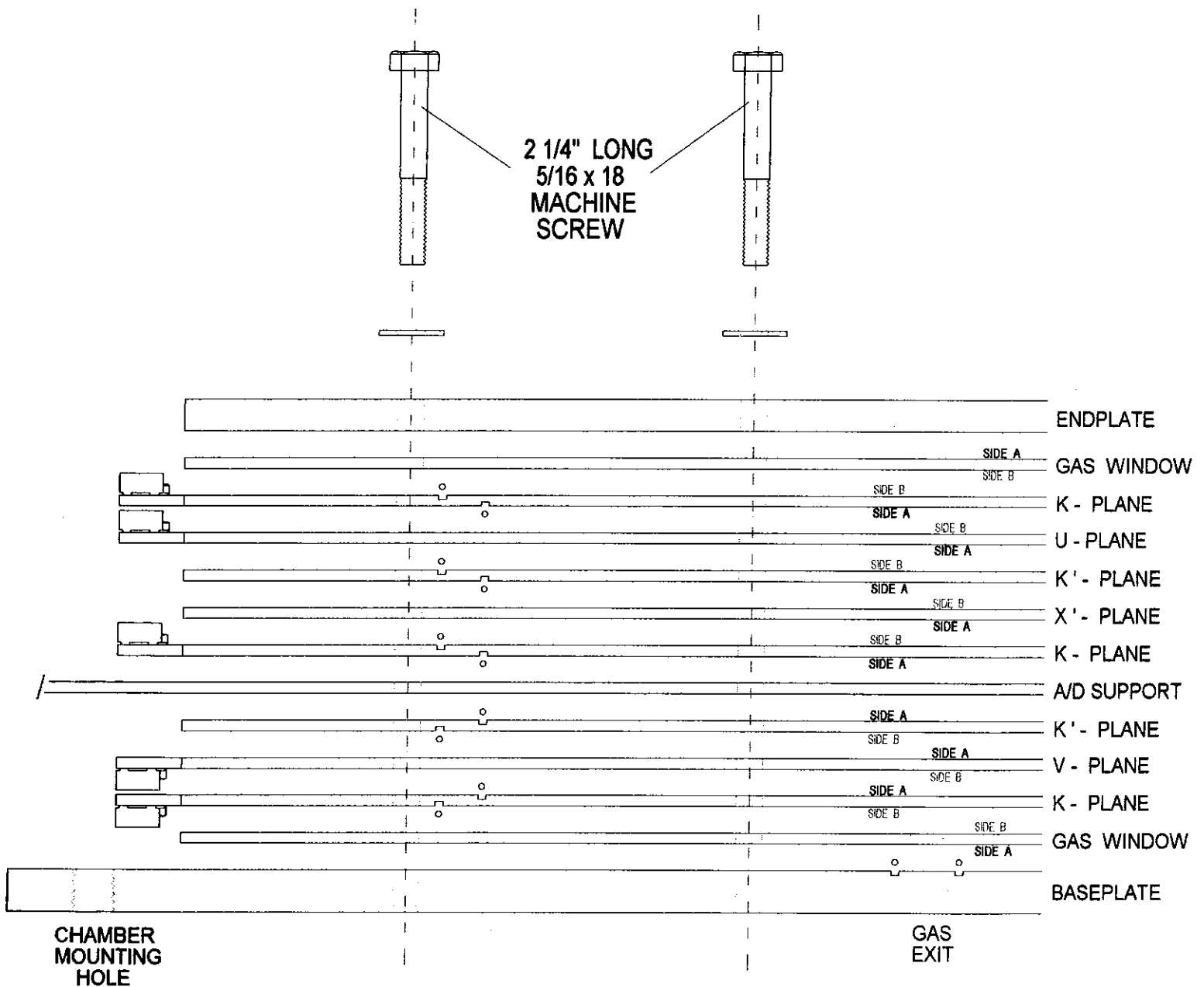


BBC2 CHAMBER ASSEMBLY SEQUENCE



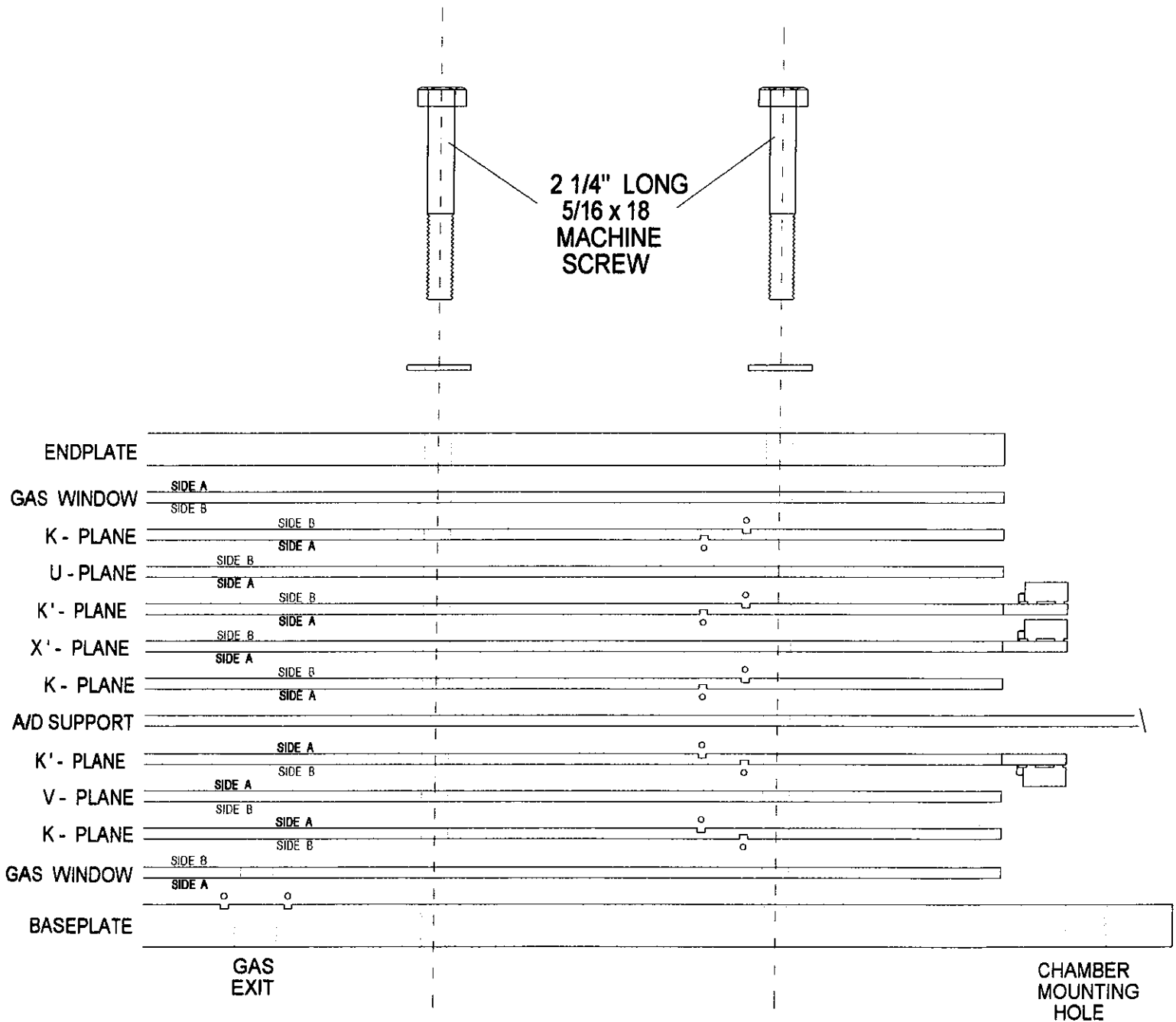
BBC2 CHAMBER ASSEMBLY DRAWING:

SIDE VIEW OF END #1 (TOP)



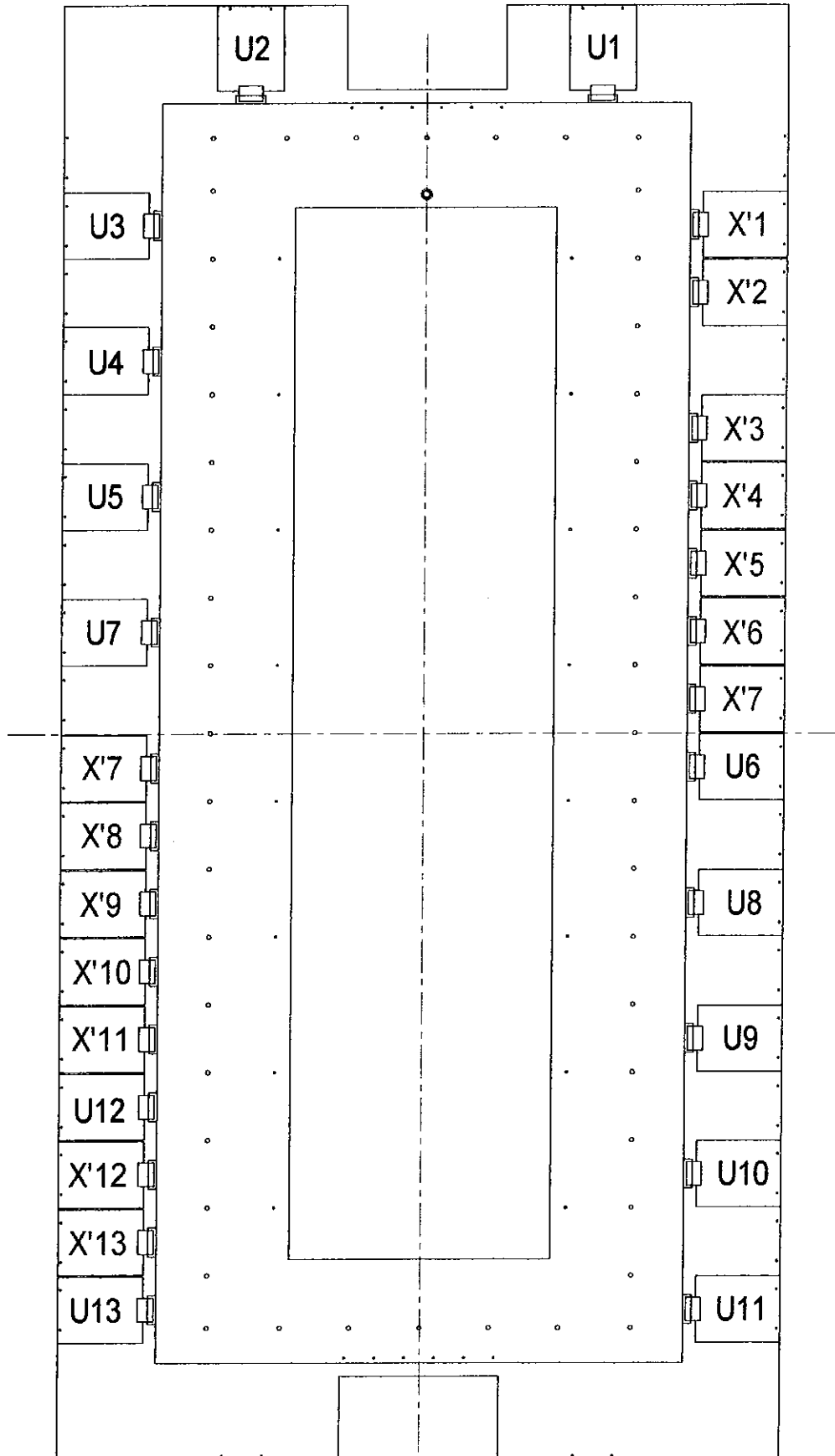
BBC2 CHAMBER ASSEMBLY DRAWING:

SIDE VIEW OF END #2 (BOTTOM)



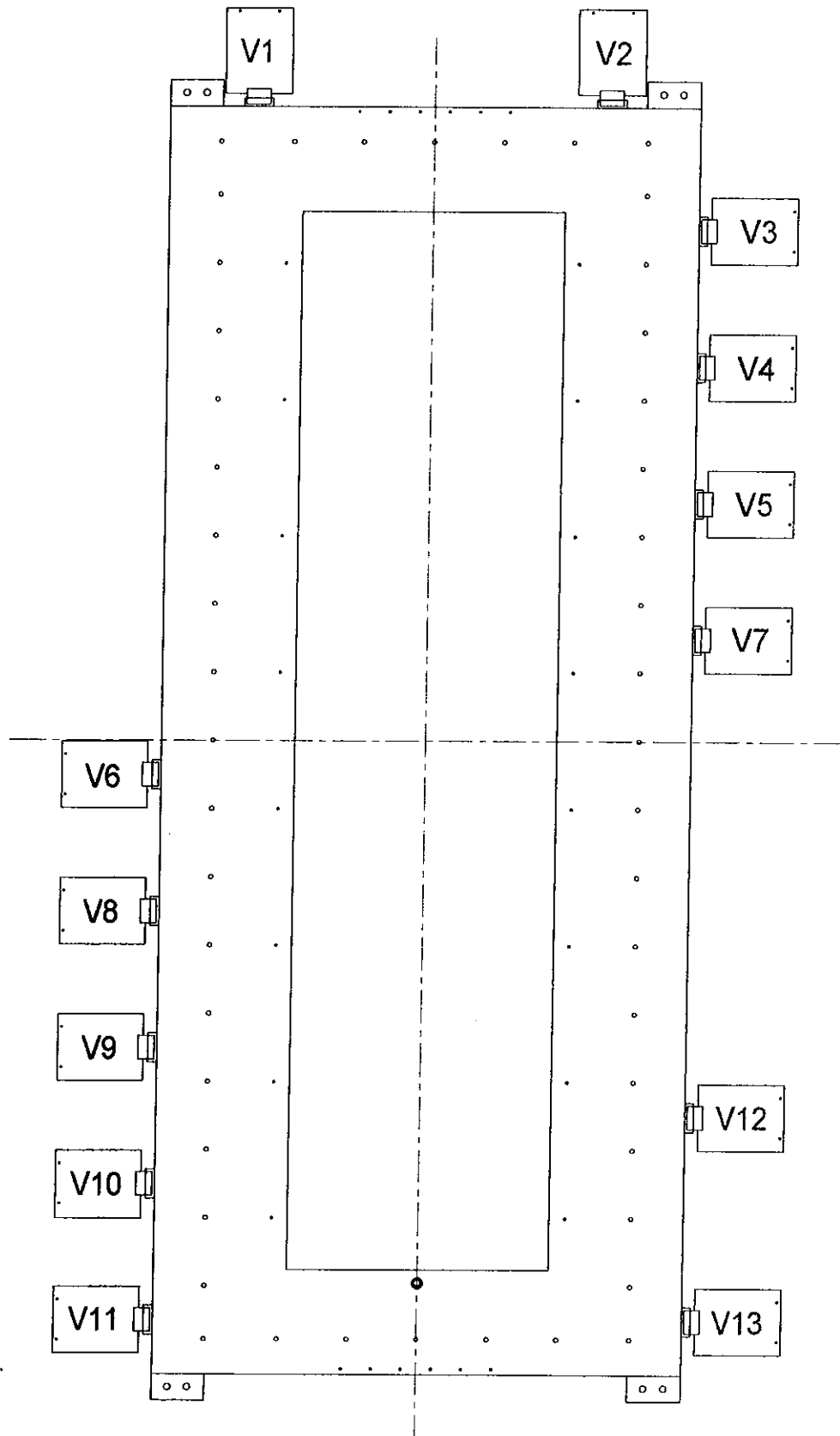
BBC2 FRONT CHAMBER ASSEMBLY SHOWING A/D ADAPTER CARDS
FOR U, X' PLANES MOUNTED ON ADAPTER SUPPORT BOARD

(LOOKING DOWNSTREAM WITH BEAM)



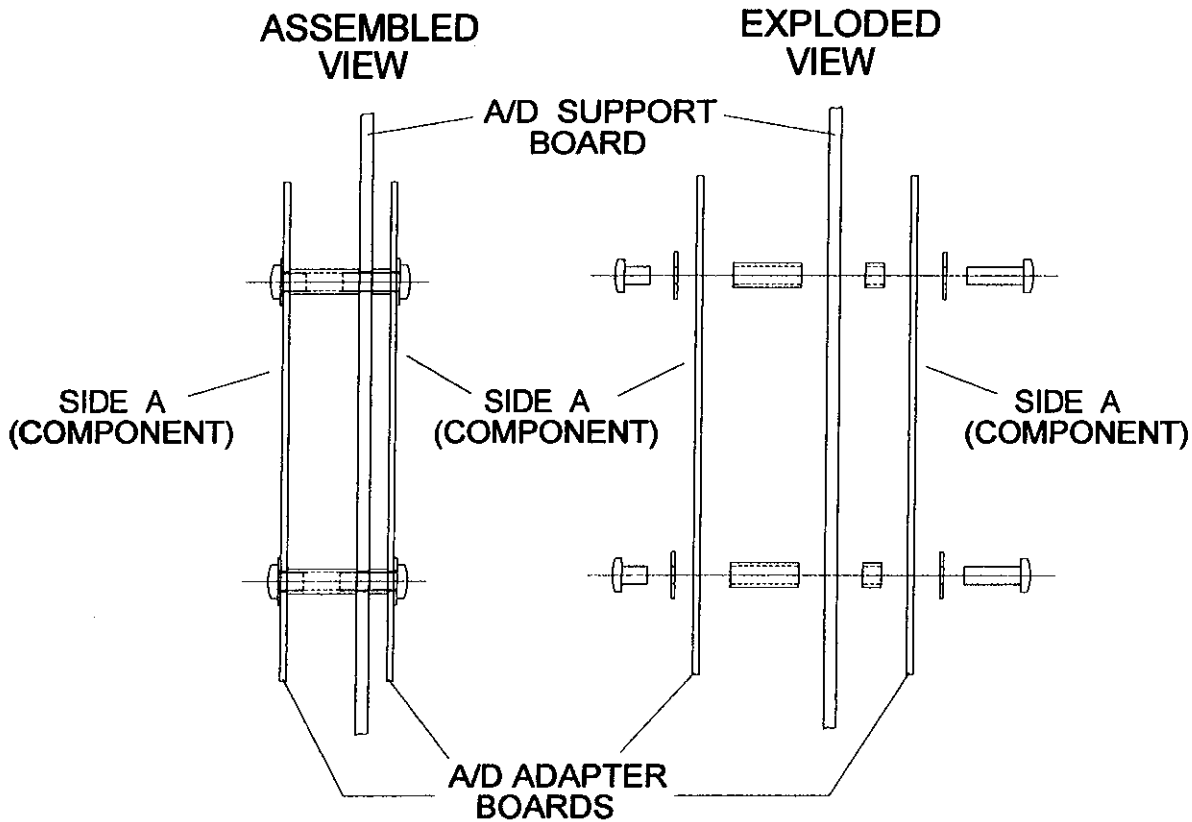
BBC2 REAR CHAMBER ASSEMBLY SHOWING A/D ADAPTER CARDS FOR V PLANE MOUNTED ON ADAPTER SUPPORT BOARD

(LOOKING DOWNSTREAM WITH BEAM)



BBC2 ADAPTER BOARD MOUNTING ASSEMBLY DRAWING

VIEW TOWARD CHAMBER (TYPICAL)



REQUIRED MOUNTING HARDWARE

SPACERS (BRASS, 8-32 THREAD)

TYPE	LENGTH	QUANTITY
A	3/16"	52
B	7/16"	26
C	11/16"	0

SCREWS (8-32 BINDING HEAD)

LENGTH	QUANTITY
1/4"	13
3/8"	9
5/8"	13
7/8"	7
8-32 NUT	16

BBC2 ADAPTER BOARD ASSEMBLY CHART

SLOTS L1 & R1 LOCATED AT TOP OF CHAMBER

SLOTS L2 - L19 LOCATED ON LEFT SIDE OF CHAMBER

SLOTS R2 - R19 LOCATED ON RIGHT SIDE OF CHAMBER

SLOTS L20 & R20 LOCATED AT BOTTOM OF CHAMBER

CHAMBER REAR

A/D SLOT	SCREW LENGTH	ADAPTER CARD #	SPACER TYPE
L1	5/8"	V1	A
L2	NONE	UNUSED	NONE
L3	3/8"	UNUSED	NONE
L4	NONE	UNUSED	NONE
L5	3/8"	UNUSED	NONE
L6	NONE	UNUSED	NONE
L7	3/8"	UNUSED	NONE
L8	NONE	UNUSED	NONE
L9	3/8"	UNUSED	NONE
L10	NONE	UNUSED	NONE
L11	8-32 NUT	V6	A
L12	8-32 NUT	UNUSED	NONE
L13	8-32 NUT	V8	A
L14	8-32 NUT	UNUSED	NONE
L15	8-32 NUT	V9	A
L16	3/8"	UNUSED	NONE
L17	8-32 NUT	V10	A
L18	8-32 NUT	UNUSED	NONE
L19	5/8"	V11	A
L20	NONE	UNUSED	NONE
R1	5/8"	V2	A
R2	NONE	UNUSED	NONE
R3	8-32 NUT	V3	A
R4	8-32 NUT	UNUSED	NONE
R5	5/8"	V4	A
R6	8-32 NUT	UNUSED	NONE
R7	8-32 NUT	V5	A
R8	8-32 NUT	UNUSED	NONE
R9	8-32 NUT	V7	A
R10	8-32 NUT	UNUSED	NONE
R11	3/8"	UNUSED	NONE
R12	NONE	UNUSED	NONE
R13	3/8"	UNUSED	NONE
R14	NONE	UNUSED	NONE
R15	3/8"	UNUSED	NONE
R16	5/8"	V12	A
R17	3/8"	UNUSED	NONE
R18	NONE	UNUSED	NONE
R19	5/8"	V13	A
R20	NONE	UNUSED	NONE

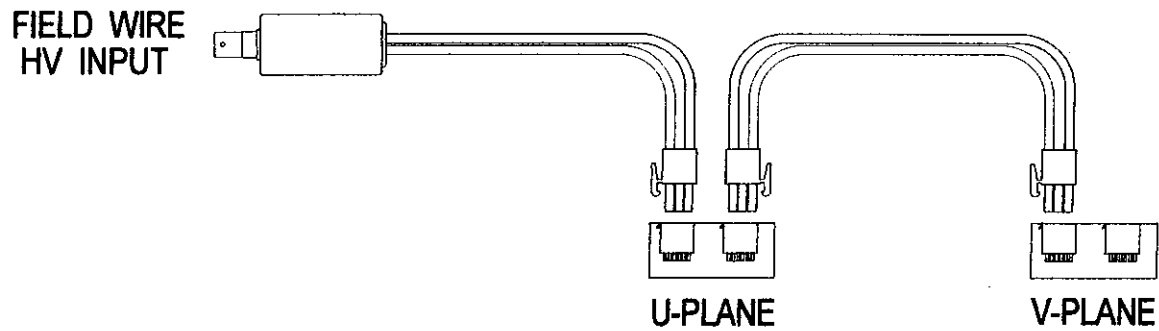
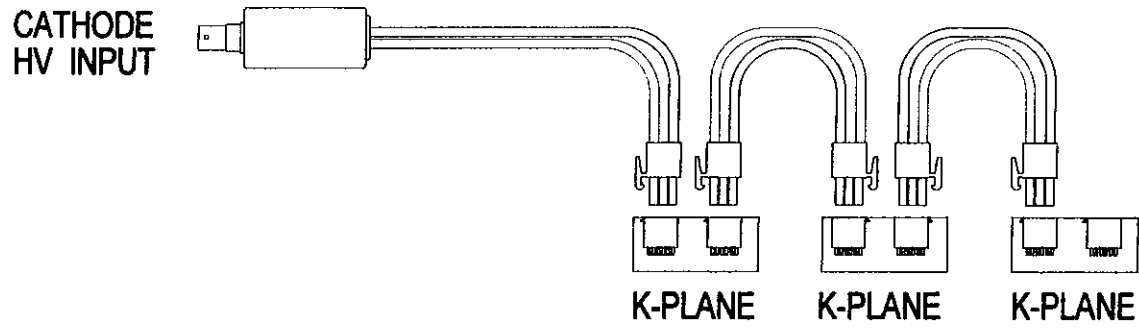
CHAMBER FRONT

SPACER TYPE	ADAPTER CARD #	SCREW LENGTH	A/D SLOT
B	U2	1/4"	L1
NONE	UNUSED	NONE	L2
B	U3	1/4"	L3
NONE	UNUSED	NONE	L4
B	U4	1/4"	L5
NONE	UNUSED	NONE	L6
B	U5	1/4"	L7
NONE	UNUSED	NONE	L8
B	U7	1/4"	L9
NONE	UNUSED	NONE	L10
A	X'7	7/8"	L11
A	X'8	5/8"	L12
A	X'9	7/8"	L13
A	X'10	5/8"	L14
A	X'11	7/8"	L15
B	U12	1/4"	L16
A	X'12	7/8"	L17
A	X'13	5/8"	L18
B	U13	1/4"	L19
NONE	UNUSED	NONE	L20
B	U1	1/4"	R1
NONE	UNUSED	NONE	R2
A	X'1	7/8"	R3
A	X'2	5/8"	R4
NONE	UNUSED	8-32 NUT	R5
A	X'3	5/8"	R6
A	X'4	7/8"	R7
A	X'5	5/8"	R8
A	X'6	7/8"	R9
A	X'7	5/8"	R10
B	U6	1/4"	R11
NONE	UNUSED	NONE	R12
B	U8	1/4"	R13
NONE	UNUSED	NONE	R14
B	U9	1/4"	R15
NONE	UNUSED	8-32 NUT	R16
B	U10	1/4"	R17
NONE	UNUSED	NONE	R18
B	U11	1/4"	R19
NONE	UNUSED	NONE	R20

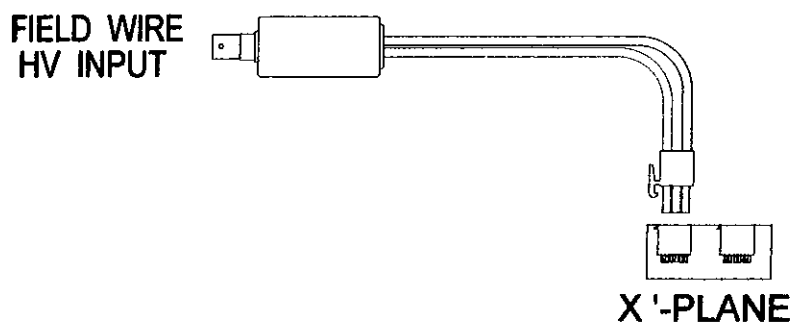
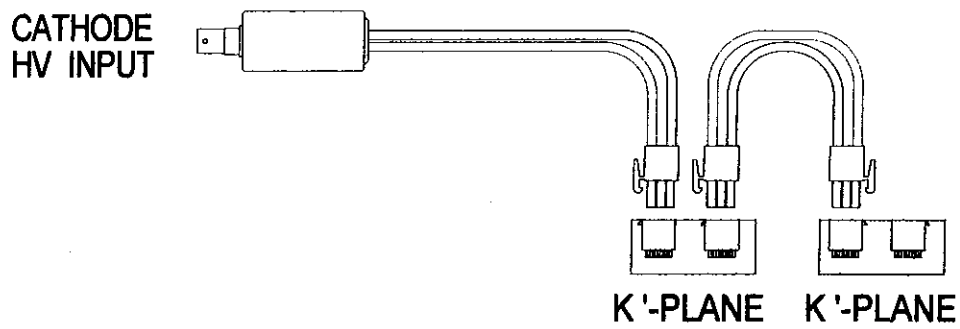
ADAPTER SUPPORT BOARD

BBC2 HV CABLING SCHEMATIC

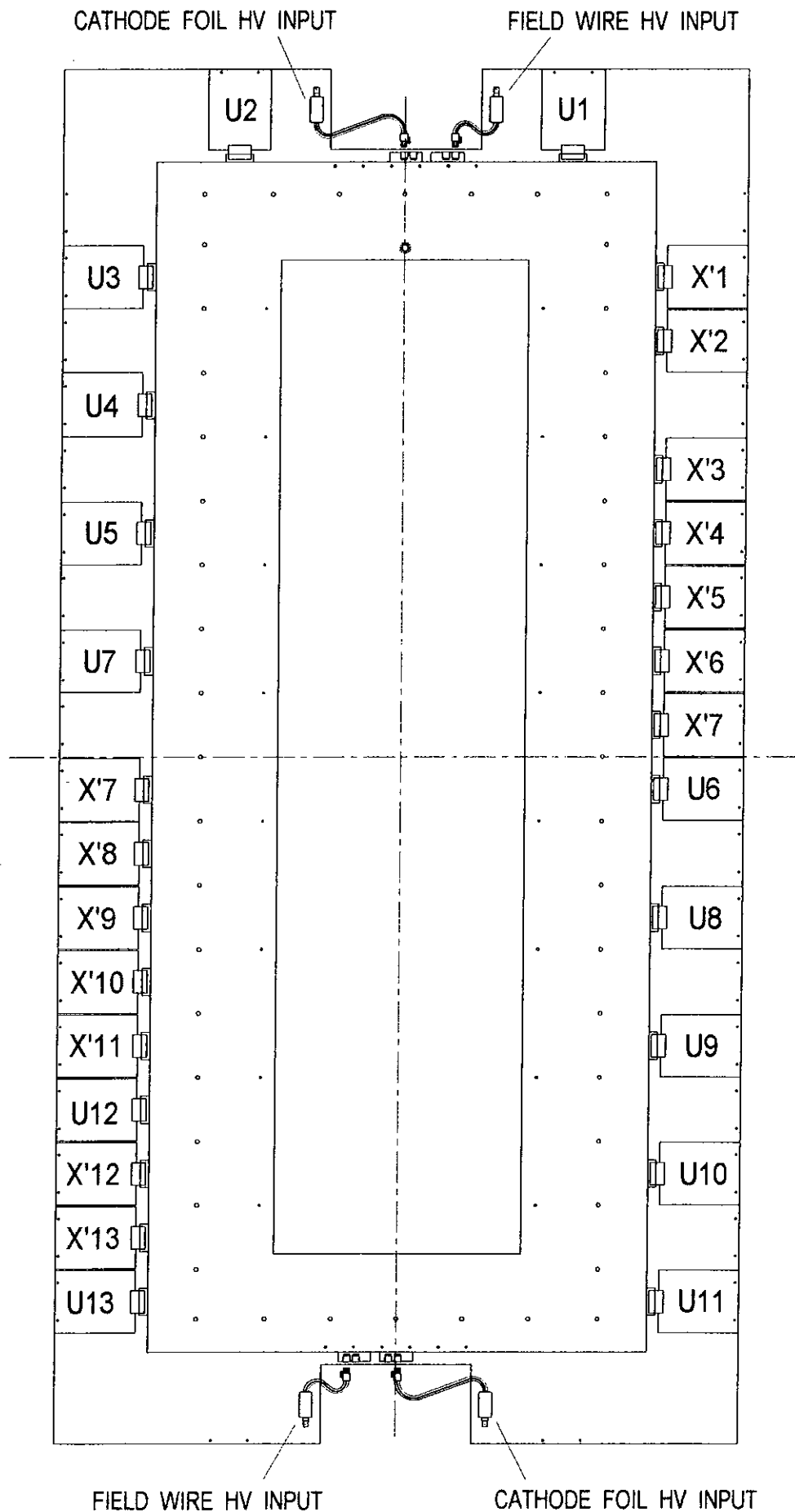
HV CABLING: END #1



HV CABLING: END #2

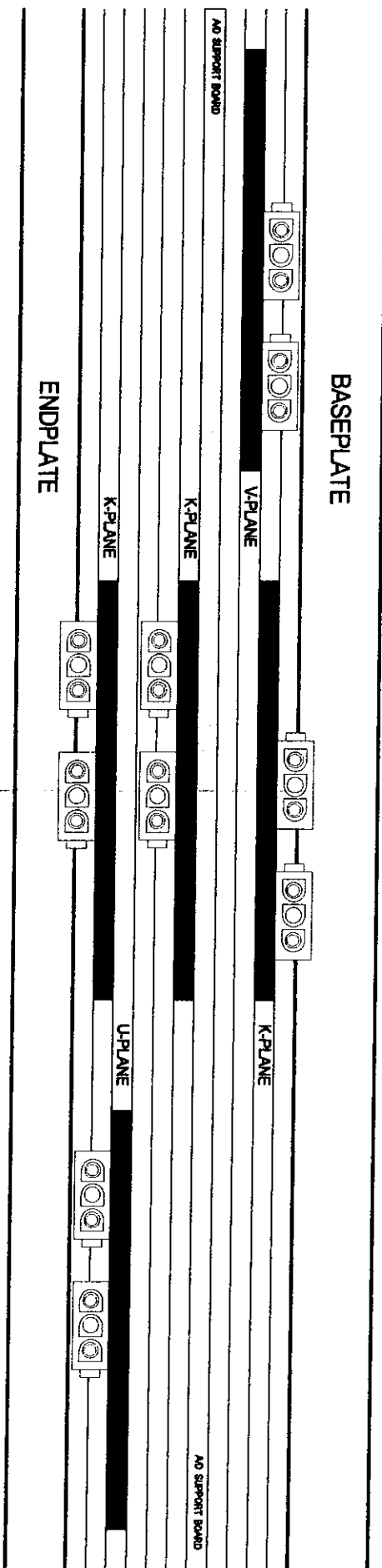


BBC2 FRONT CHAMBER ASSEMBLY SHOWING FIELD WIRE AND CATHODE FOIL HV INPUTS



BBC2 CHAMBER FIELD WIRE & CATHODE HV INPUTS (SCALE = 1:1)

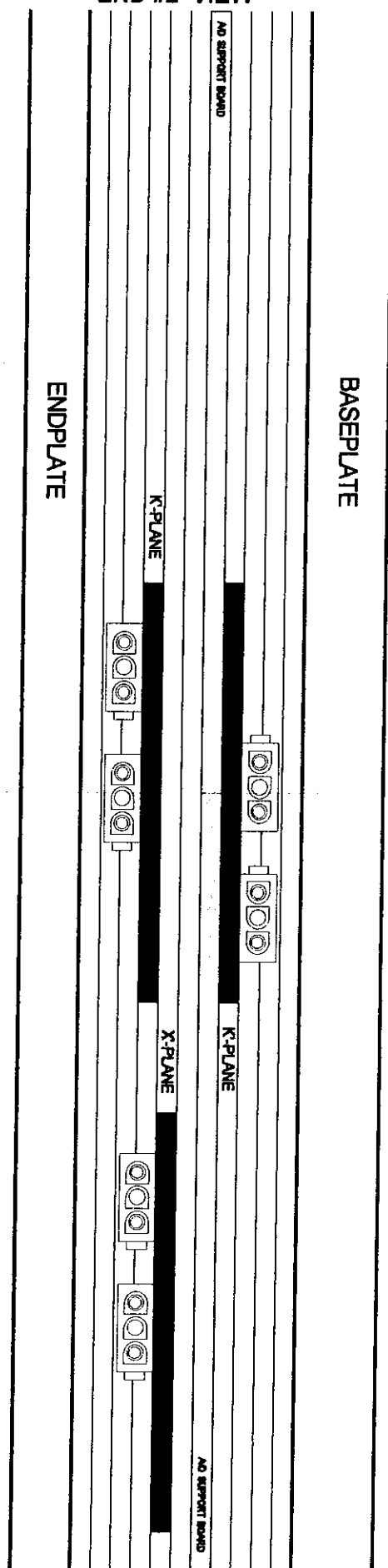
END #1 VIEW



END #2 VIEW

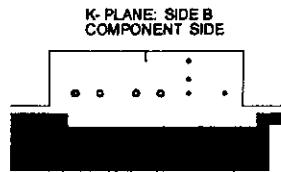
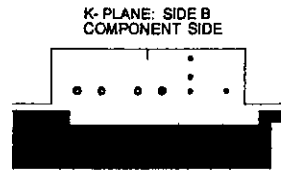
FIELD WIRE
HV = BLUE

CATHODE
HV = RED

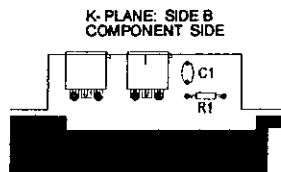


BBC2 HV COMPONENTS & ASSEMBLY

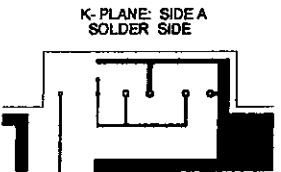
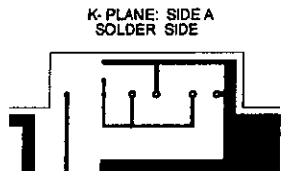
HV TABS: K-PLANE



HV TRACES SHOWN IN RED

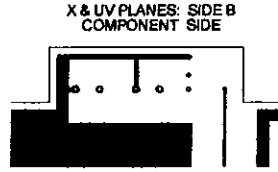
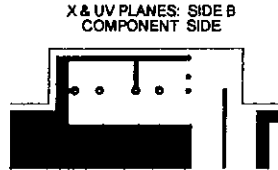


R1: 1.0 MEGOHM, 1/4 WATT
C1: 0.001 uF, 3 KV

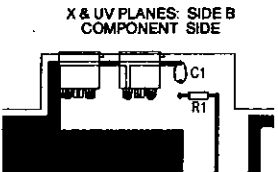


HV TRACES SHOWN IN RED

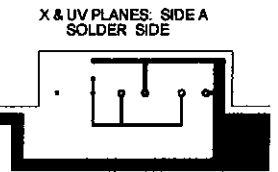
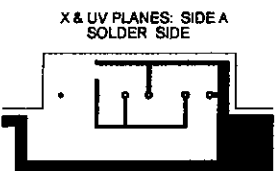
HV TABS: X & UV PLANES



HV TRACES SHOWN IN RED

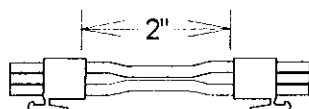
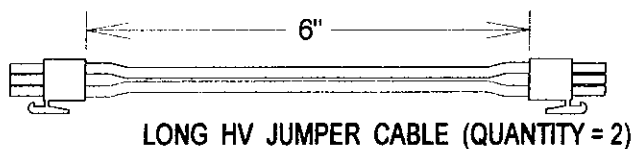
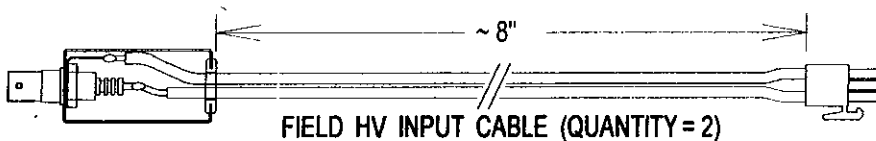
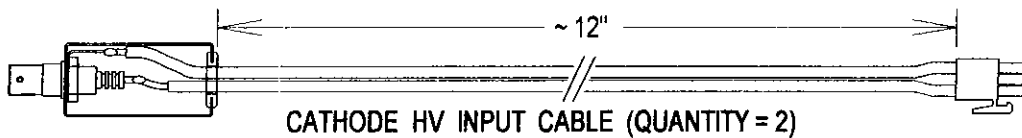
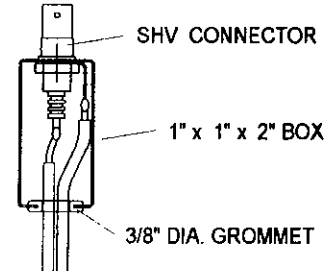


R1: 1.0 MEGOHM, 1/4 WATT
C1: 0.001 uF, 3 KV



HV TRACES SHOWN IN RED

HV ADAPTER BOX



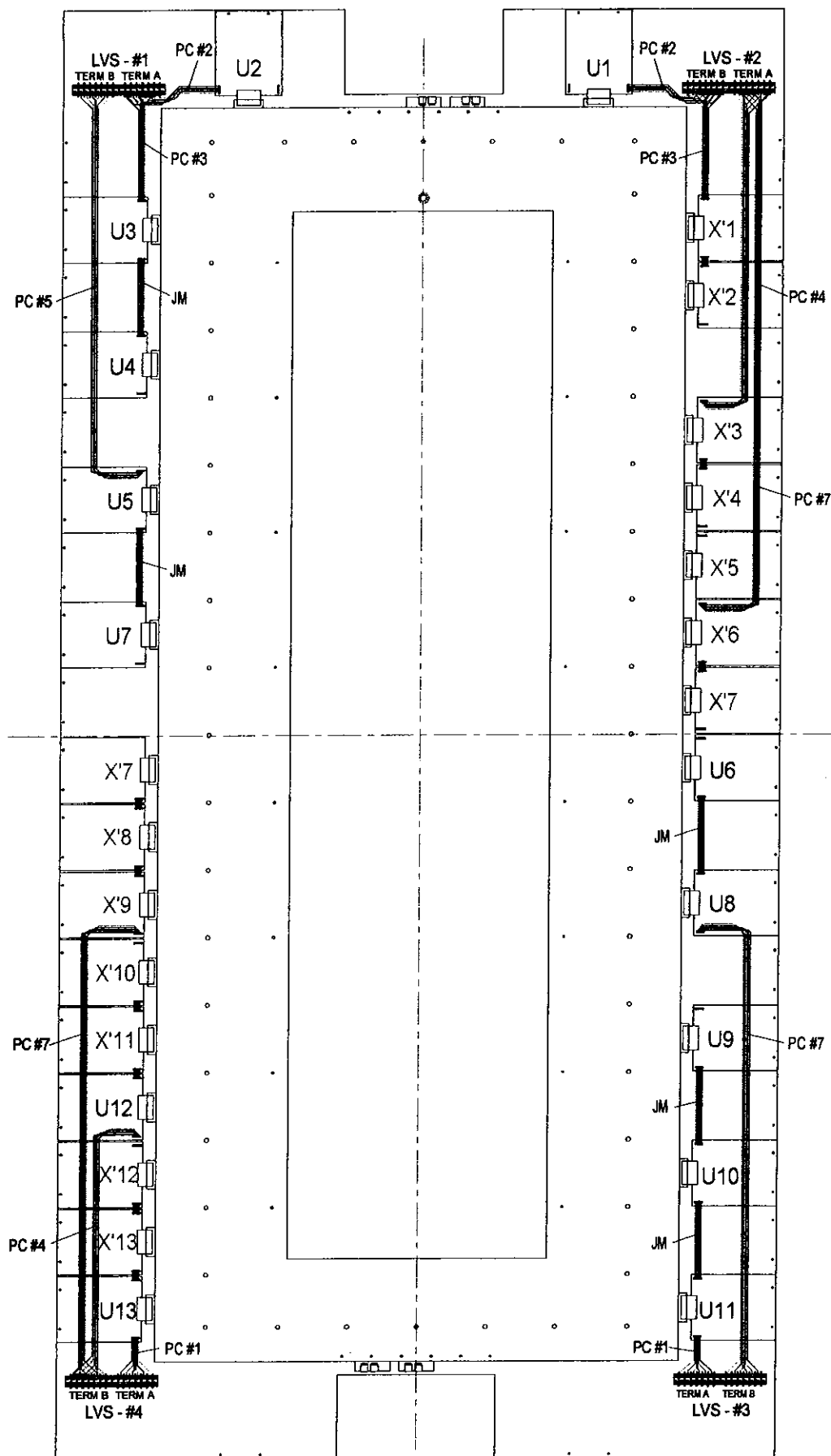
BBC2 FRONT CHAMBER LOW VOLTAGE DISTRIBUTION DIAGRAM SHOWING THE CABLING FOR THE A/D ADAPTER CARDS FOR THE U, X' PLANES

(LOOKING DOWNSTREAM WITH BEAM)

PC = POWER CABLE

JM = MEDIUM JUMPER POWER CABLE

JL = LONG JUMPER POWER CABLE



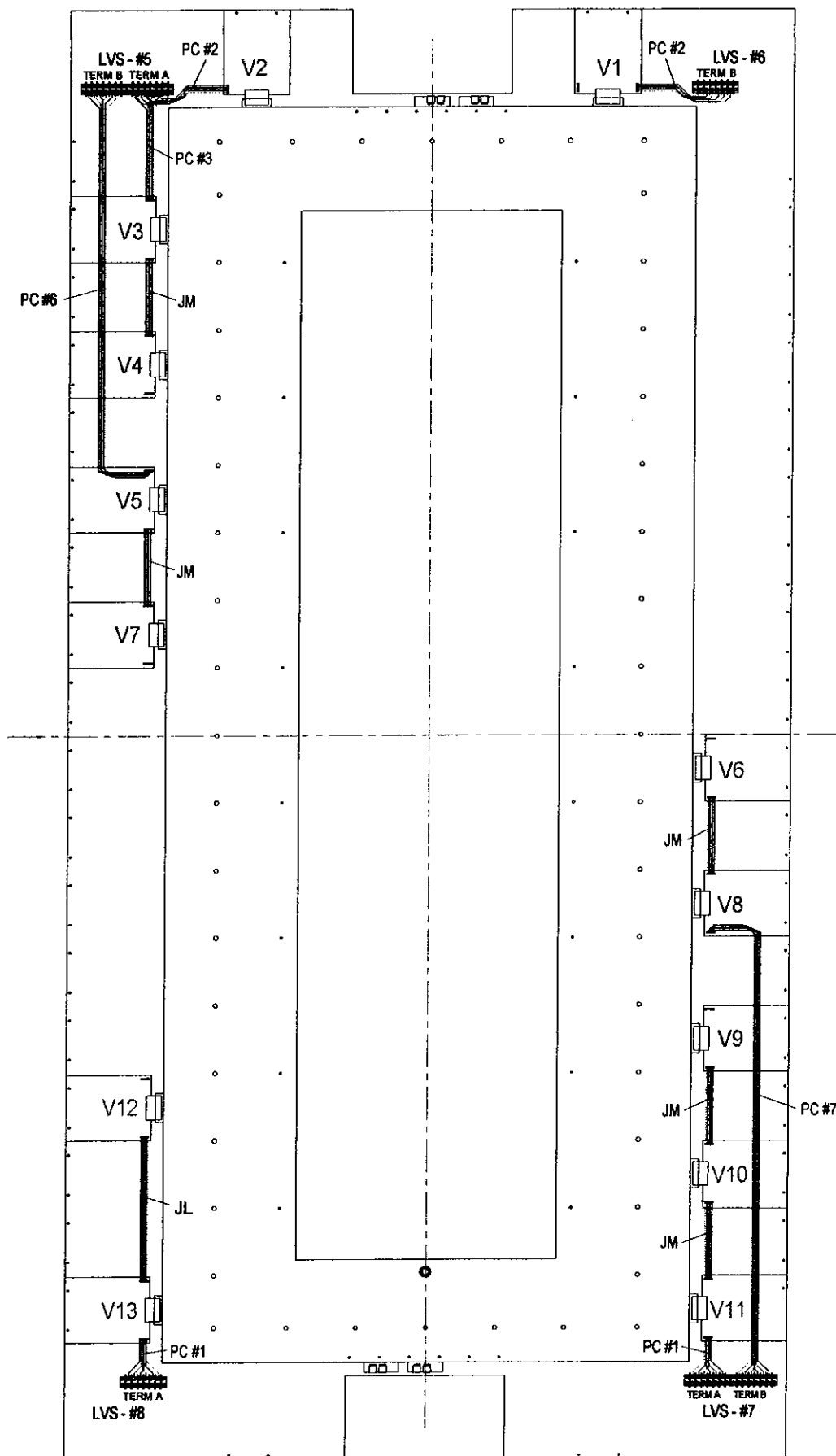
BBC2 REAR CHAMBER LOW VOLTAGE DISTRIBUTION DIAGRAM SHOWING THE CABLING FOR THE AD ADAPTER CARDS FOR THE V PLANE

(LOOKING UPSTREAM TOWARD BEAM)

PC = POWER CABLE

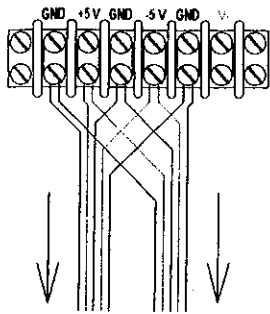
JM = MEDIUM JUMPER POWER CABLE

JL = LONG JUMPER POWER CABLE



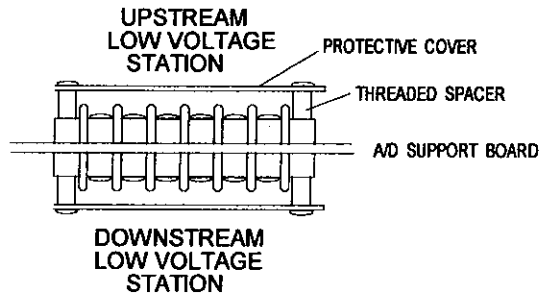
BBC3 LOW VOLTAGE POWER AND A/D BIAS DISTRIBUTION COMPONENTS

LOW VOLTAGE POWER & A/D BIAS INPUT STATION

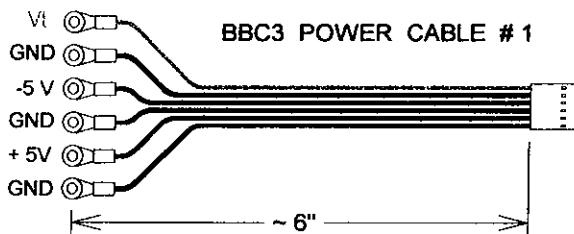
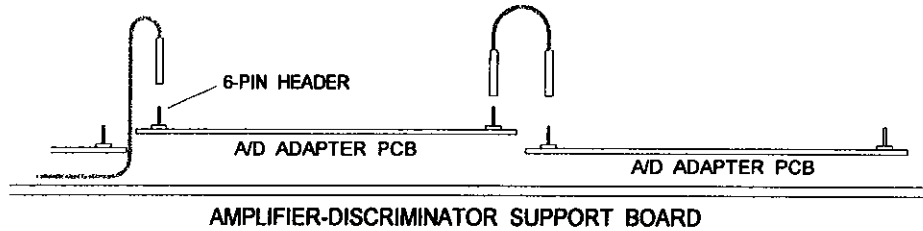


A/D MODULES

BACK-TO-BACK LVS STATIONS

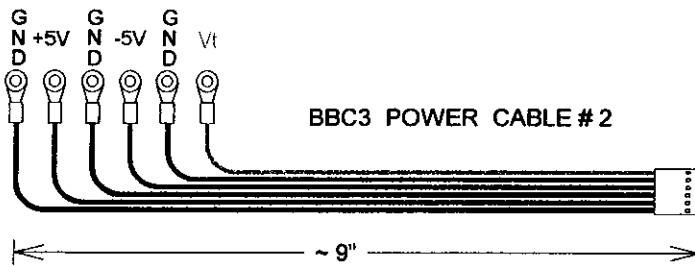


LOW VOLTAGE POWER AND CHAMBER BIAS CONNECTIONS TO A/D ADAPTER PCB'S

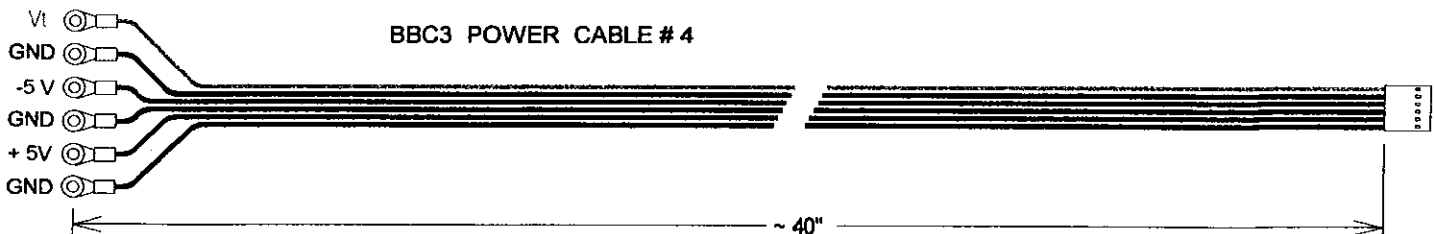
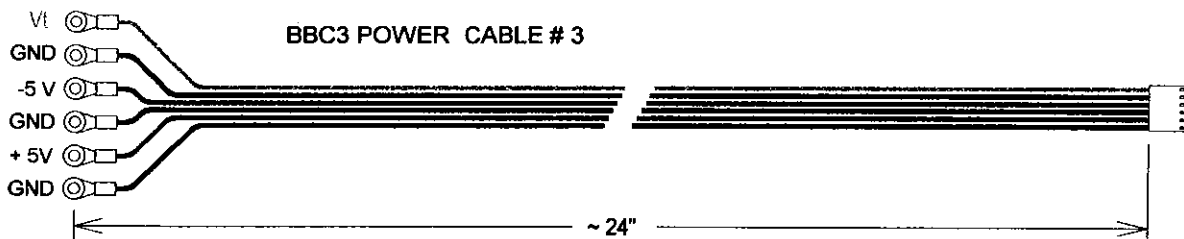
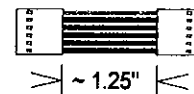


BBC3 POWER CABLES: REQUIRED QUANTITIES

BBC3 POWER CABLE #1	8
BBC3 POWER CABLE #2	8
BBC3 POWER CABLE #3	8
BBC3 POWER CABLE #4	8
JUMPER POWER CABLE	46



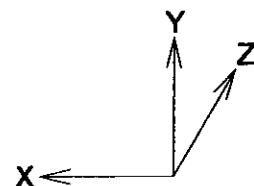
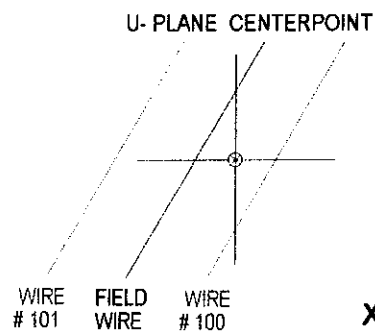
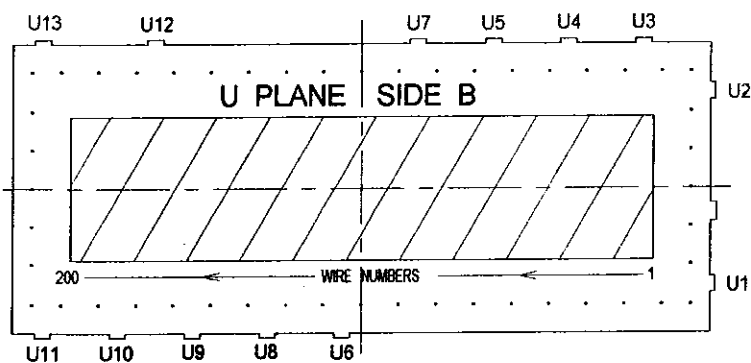
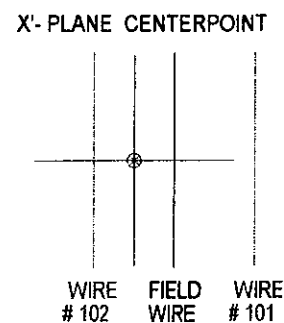
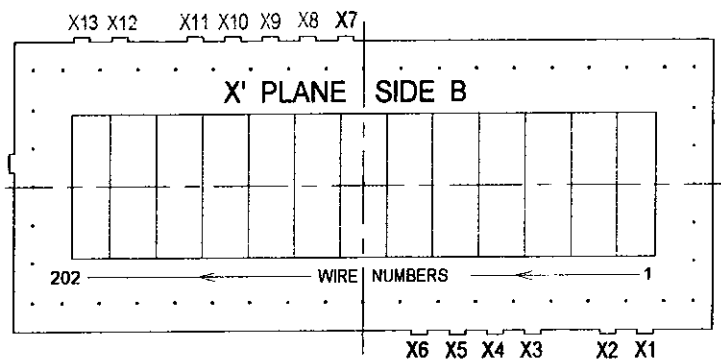
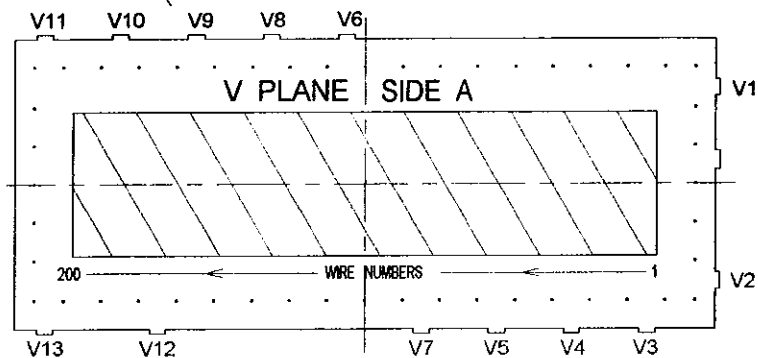
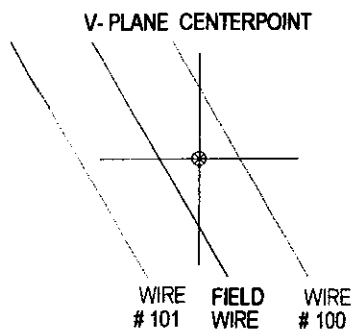
JUMPER POWER CABLE



BBC2 WIRE PLANE GEOMETRY

GREEN: A/D CHANNEL # INCREASES WITH INCREASING WIRE #

RED: A/D CHANNEL # DECREASES WITH INCREASING WIRE #



BEAM

BBC2 WIRE MAPS

U-PLANE				X'-PLANE				V-PLANE		
W I R E G R O U P	W I R E #	A / D C H A N #		W I R E G R O U P	W I R E #	A / D C H A N #		W I R E G R O U P	W I R E #	A / D C H A N #
U1	W1 ⋮ W12	12 ⋮ 1		X'1	W1 ⋮ W13	13 ⋮ 1		V1	W1 ⋮ W12	12 ⋮ 1
U2	W13 ⋮ W28	1 ⋮ 16		X'2	W14 ⋮ W29	16 ⋮ 1		V2	W13 ⋮ W28	1 ⋮ 16
U3	W29 ⋮ W44	1 ⋮ 16		X'3	W30 ⋮ W45	16 ⋮ 1		V3	W29 ⋮ W44	1 ⋮ 16
U4	W45 ⋮ W60	1 ⋮ 16		X'4	W46 ⋮ W61	16 ⋮ 1		V4	W45 ⋮ W60	1 ⋮ 16
U5	W61 ⋮ W76	1 ⋮ 16		X'5	W62 ⋮ W77	16 ⋮ 1		V5	W61 ⋮ W76	1 ⋮ 16
U6	W77 ⋮ W92	16 ⋮ 1		X'6	W78 ⋮ W93	16 ⋮ 1		V6	W77 ⋮ W92	16 ⋮ 1
U7	W93 ⋮ W108	1 ⋮ 16		X'7	W94 ⋮ W109	1 ⋮ 16		V7	W93 ⋮ W108	1 ⋮ 16
U8	W109 ⋮ W124	16 ⋮ 1		X'8	W110 ⋮ W125	1 ⋮ 16		V8	W109 ⋮ W124	16 ⋮ 1
U9	W125 ⋮ W140	16 ⋮ 1		X'9	W126 ⋮ W141	1 ⋮ 16		V9	W125 ⋮ W140	16 ⋮ 1
U10	W141 ⋮ W156	16 ⋮ 1		X'10	W142 ⋮ W157	1 ⋮ 16		V10	W141 ⋮ W156	16 ⋮ 1
U11	W157 ⋮ W172	16 ⋮ 1		X'11	W158 ⋮ W173	1 ⋮ 16		V11	W157 ⋮ W172	16 ⋮ 1
U12	W173 ⋮ W188	1 ⋮ 16		X'12	W174 ⋮ W189	1 ⋮ 16		V12	W173 ⋮ W188	1 ⋮ 16
U13	W189 ⋮ W200	1 ⋮ 12		X'13	W190 ⋮ W202	1 ⋮ 13		V13	W189 ⋮ W200	1 ⋮ 16