

ASTRO FLICKSTER

 Gremlin®/SEGA®

MANUAL PART NO. 420-0410
or
420-0411



OWNER'S MANUAL

ASTRO FIGHTER
OPERATING INSTRUCTIONS
AND
SERVICE MANUAL

INTRODUCTION...

This is an electronic game that makes extensive use of digital integrated circuitry and television monitor circuitry. This manual assumes the maintenance technician possesses a general knowledge of solid state circuitry microprocessor, TTL digital integrated circuitry and T.V. monitor concepts. Any individual **not** knowledgeable in these areas **should not attempt repair of the electronic portion of this game. It should be noted that any attempt to repair the game in the field without the express consent of the factory will immediately void the warranty!!!**

IMPORTANT NOTES...

An important service note is posted in this game and is repeated here for emphasis:

If at any time the T.V. screen shows a meaningless display or the game otherwise malfunctions, simply drop a coin into the coin mechanism. This should correct the problem. If not, the game requires service.

The circuitry in this game has been arranged so that the insertion of a quarter through the coin mechanism will reset the restart in the system. This clears up temporary problems caused by power line disturbances, static, etc.

ALSO...

Never replace any components with anything other than exact replacement parts. (See Parts List located on Service Schematics.)

Never remove circuit boards/connections while power is on.

Do Not replace the fuse with anything other than the proper value. A blown fuse indicates an overload condition within the game. Replacing the fuse with a higher value can cause severe damage to internal components if an overload occurs.

Always consult the manual before attempting repairs.

Correspondence regarding this game should be addressed to:

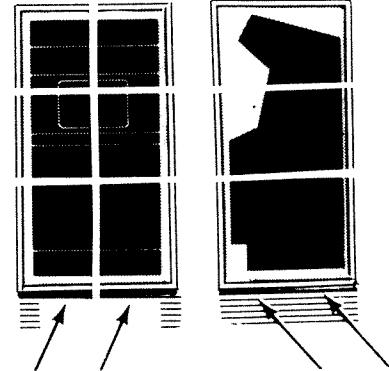
GREMLIN INDUSTRIES, INC.
8401 Aero Drive
San Diego, California 92123
(714) 277-8700

REPACKAGING INSTRUCTIONS . . .

Arcade
25 $\frac{1}{4}$ " W x 67" H x 28" D
64.77cm W x 170.18cm H x 71.12cm D
290 lbs./132 kg.

Arcade Version

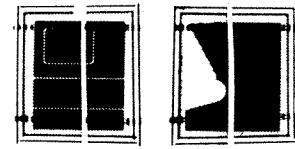
1. Carefully lay game on its side.
2. Attach pallet with **four** 5/16" - 18 x 1-3/4" bolts, as shown.
3. See Final Recrating Instructions, below.



MiniVideo
22" H x 21" W x 20" D
55.88cm H x 53.34cm W x 50.8cm D
80 lbs./36 kg.

Mini-Video Version

1. Place game upright inside bottom cover.
2. Slide cover over game. Add protective packing material.
3. Place top cover over side cover.
4. See Final Recrating Instructions, below.



Cocktail Version

1. Place game inside carton.
2. Add protective packing material.
3. Place inside protective top cover over unit.
4. Close flaps and secure with shipping tape.
5. See Final Recrating Instructions, below.

Cocktail
22" W x 34" L x 24 $\frac{1}{4}$ " H
55.88cm W x 89.98cm L x 62.23cm H
80 lbs./36 kg.



FINAL RECRATING INSTRUCTIONS . . .

Place game upright. Tape down game keys. Then, crate the game using appropriate shock-absorbent packing material. Include packing on edges of game. **Secure package with strapping.**

Note . . . If the game is to be shipped to Gremlin Industries for service or repair, attach a tag identifying the distributor and indicate the service or repair to be done. Include the full serial number of the game.

All items must be shipped prepaid.

GAME CONCEPT . . .

ASTRO FIGHTER is a 1 or 2 player game of space adventure. Two players may take turns, competing for high score. The player's warship faces meteor showers and four lines of enemy defense forces in an effort to reach THE MASTER and destroy it. Besides the challenges to fighting ability, the player's warship has an expendable supply of fuel that must last through the fight with THE MASTER. Two player controls are provided: a joystick enables the player to maneuver his warship from side to side; and a missile firing button.

The play begins with your warship at the bottom of the screen facing a barrage of yellow meteors that will destroy your warship, if hit. All action appears from the top of the screen and descends to the bottom throughout the game.

You are given a full supply of fuel in the beginning of play. This supply will steadily be consumed as you play and you must defeat THE MASTER before you can refuel. You will want to watch this gauge carefully throughout the game; a blue line will show your present fuel condition at all times.

After the initial meteor shower, you will face 11 enemy warships. They will appear in a pyramid formation with the wide row emerging from the top of the screen first. The enemy will move from side to side and is capable of firing not only straight ahead, but to its left and right. As you destroy the enemy ships, the action of the remainder is intensified.

If an enemy warship gets past you and reaches the bottom of the screen, regardless of how many previous warships, or formations, you have destroyed, the original group of defenders will reappear and your warship will be advanced one step closer to the enemy. Essentially, you will begin again, only closer, and you will have used precious fuel in the meantime.

After you have conquered the first formation of enemy warships, you will face a new formation of 12 warships, staggered six across and two deep.

After defeating the second formation, you will face a force of 12 warships that are not in a formation, but are randomly scattered in front of you.

Following the victory of having blasted away the third line of defenses, you will now face 15 enemy warships, five across and three deep, in your efforts to reach THE MASTER and defeat it. The vertical columns of this defense force will be varied in their distance to your warship.

If you succeed in defeating all 15 of the enemy warships, you are now ready to meet, and destroy, THE MASTER.

A pattern will emerge on the screen resembling a corridor that your warship is traveling along. The stars will become brighter and THE MASTER will appear. THE MASTER's body will expand and contract as it moves across the screen, back and forth, while firing vicious missiles at you. THE MASTER's missiles are random and may be fired in any direction.

THE MASTER can only be defeated by a direct hit in the eye. This is the only way you can destroy THE MASTER.

When you have destroyed THE MASTER, a fuel pipe will link-up with your warship and your supply will, again, be full. You are now ready for more combat in your efforts to, once again, seek and destroy THE MASTER. But, beware...the meteor showers and enemy action are now intensified and your challenge is more difficult.

Throughout the play, a watchful eye must be kept on your fuel gauge. If your supply is exhausted at any time before you destroy THE MASTER...your warship will explode!

Player 1 and player 2 scores are displayed at the top of the screen and the high score from past games will be displayed.

The operator may select the number of credits per coin. In addition, the operator may enable the one-player, or two-player switch, located inside the unit.

OPTIONS SELECT AND SOUND CONTROL ADJUSTMENTS

DIP Switch No.

1 Not Used

2 ON BONUS awarded for each row eliminated

OFF BONUS awarded after formation eliminated

3 ON No Replay

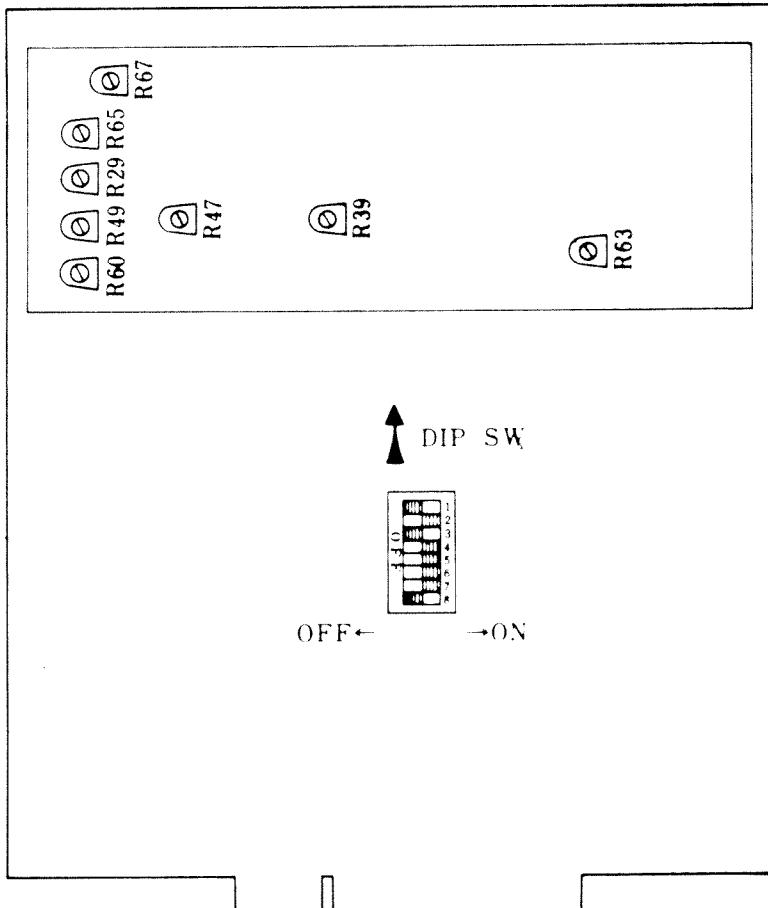
OFF Replay

4	OFF	ON	OFF	ON
5	OFF	OFF	ON	ON
	1COIN·1PLAY	2COIN·1PLAY	1COIN·2PLAY	

6	OFF	OFF	ON	ON
7	OFF	ON	OFF	ON
	9 JUMP	7 JUMP	5 JUMP	3 JUMP

8 On Upright or Mini-Video model

OFF Cocktail or Slimline model



SOUND ADJUSTMENTS

R29 Explosion Sound

R39 Firing Sound

R49 Master's Dying Sound

R60 Firing Decay

R63 Music Sound

R65 High Pitch Tone Control

R67 Main Volume Control

R47 Factory Adjusted...Do Not Set

Grenville Industries, Inc. San Diego, California 92113		PARTS LIST	TITLE ASSY HARNESS MASTER A F	800-3010 DWG NO	SH I OF 3	A REV	
		DRAWN MAHONEY CHECK <i>J. M.</i>	ENGR APPR				
LTR	DATE	REVISION DESCRIPTION			DRAFT	CHECK	APPR
A	2-6-80	RELEASED			2-8-80	J.M.	<i>J.M.</i>

Creamline Industries, Inc.
San Diego, California 92113

PARTS LIST **MASTER** **A** **F** **HARNESS**

DWG NO

REV 3 OF 3 - A

Gremlin Industries, Inc. San Diego, California 92113	PARTS LIST	TITLE <i>TOP ASSEMBLY</i> <i>ASTROFIGHTER ENG WHT</i>	700-00005 DWG NO	SH / OF 5	A REV
USE WITH ESD-300'S / FOR PARTS LOCATIONS	DRAWN <i>Ron Howser</i> CHECK <i>Stan Fay</i>	ENGR APPR			
LTR	DATE	REVISION DESCRIPTION	DRAFT	CHECK	APPR
A	2-11-80	RELEASED	2-8-80	<i>BB</i> <i>J.F.</i>	<i>J.F.</i>
REFER TO HEXAGON CALL OUT ON SHEETS 3 AND 4 FOR LOCATION OF PARTS LISTED HERE. <i>Ron Howser</i>					

Cessna Industries, Inc. San Diego, California 92123	PARTS LIST	TITLE ASSEMBLY CONTROL PLN ASTRO FIGHTER	800-3009	SH 1	A
	SHEET 3 IS "D" SIZE	DRAWN MAHONEY CHECK <i>J. M.</i>	DWG NO	OF 3	REV
LTR	DATE	REVISION DESCRIPTION	DRAFT	CHECK	APPR
A	2-8-80	RELEASED	2-8-80	J.M.	<i>J.M.</i>

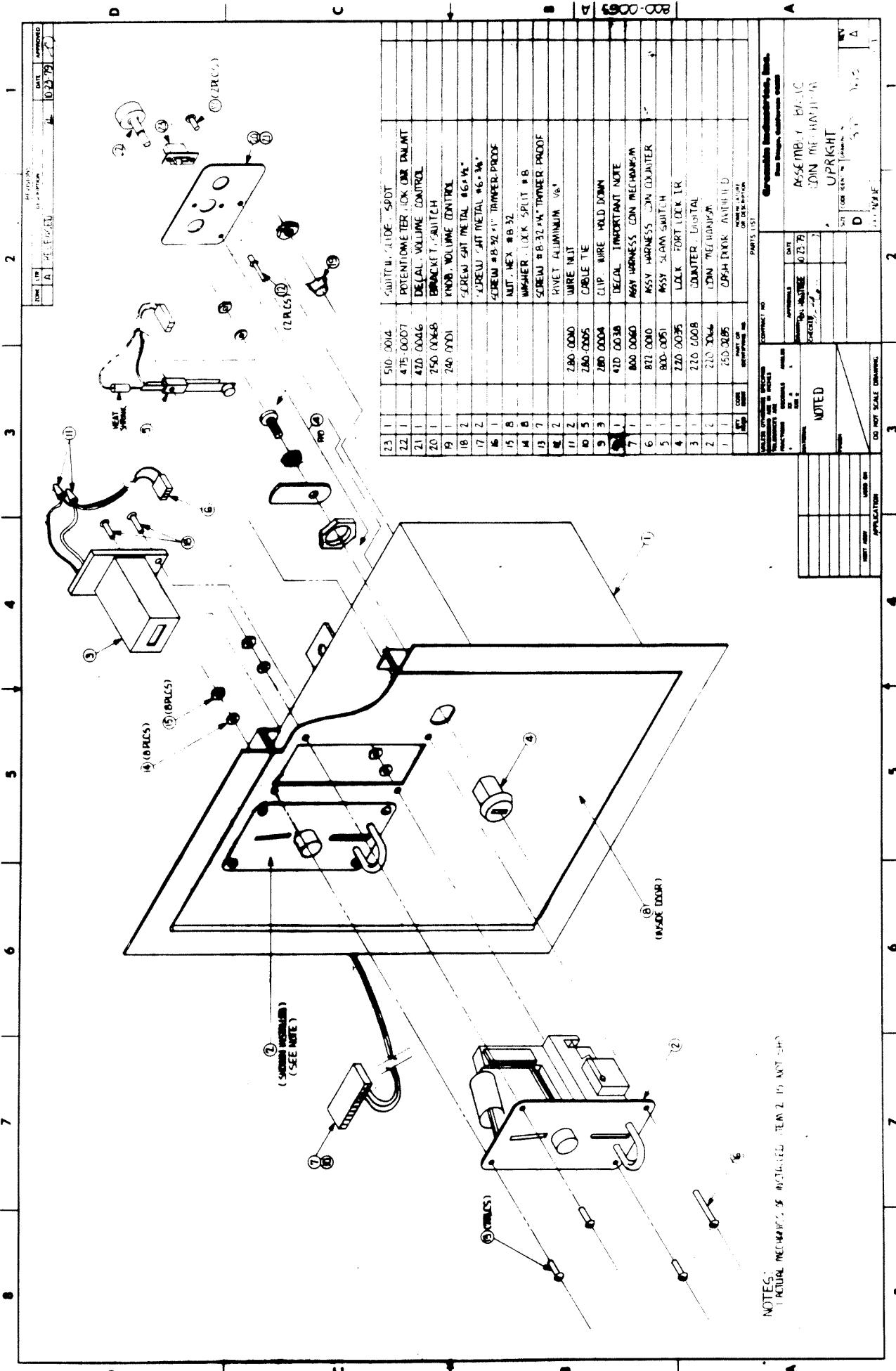
Gremlin Industries, Inc. see page, camera 913		PARTS LIST	TITLE ASSY-GAME ASTRO FIGHTER COCKTAIL (NINJA) DWG NO	700-000007 SH 2 OF 5	A REV
ITEM NO	PART NO	QTY PER ASSY	DESCRIPTION	REF DES	
1	253-0141	2	GRAPHIC CONT PANEL		
2	253-0142	1	GRAPHIC GAME SELECT		
3	280-0075	6	NUT WIRE LG.		
4	420-0370	1	DECAL COIN ENTRY		
5	420-0371	1	DECAL COIN INFO		
6	420-0404	2	TABLE GRAPHIC		
7	420-0411		MANUAL ASTRO FIGHTER (COCKTAIL)		
8	478-0001	1	TERMISTER		
9	560-0046	1	ISOLATION XFMR		
10	800-0072	1	ASSY POWER SUPPLY		
11	800-3022	1	ASSY MASTER HARNESS		
12	800-3023	1	ASSY POWER HARNESS		
13	800-3024	1	ASSY HARN VOL CONT		
14	800-3026	1	ASSY FUSE BLOCK		
15	800-3027	1	ASSY GROUND STRAP		
16	800-3028	1	ASSY EMI HARN		
17	807-0010	1	ASSY HARNESS SPEAKER		
18	834-0010	1	ASSY SPECIAL DUAL JAPAN (SEGA)		
19	834-5000	1	ASSY GAME ELECTRONICS (SEGA)		
20	600-0001	1	CORD, LINE, 3COND		
21		8	SCREW PHL. PN. HD. 6x1/2 SH. MTL		
22		6	SCREW PHL. PN. HD. 8x1/2 SH. MTL		

Gremlin Industries, Inc. San Diego, California 92123		PARTS LIST	TITLE. TOP ASSY GAME ASTRO FIGHTER SLIMLINE	700-0008 DWG NO	SH OF 6	A REV
SHTS. 4-6 ARE "D" SIZE		CHECK	DRAWN MAHONEY <i>John Mahoney</i>	ENGR		
ltr	Date	REVISION DESCRIPTION		DRAFT	CHECK	APPR
A	3-3-80	RELEASED		J.W.	<i>J.W.</i>	<i>J.W.</i>

Gremlin Industries, Inc. San Diego, California 92123		PARTS LIST	TITLE GAME ASTRO FIGHTER SLIMLINE	TOP ASSY	700-0008	SH 2 OF 6	A REV
ITEM NO	PART NO	QTY PER ASSY		DESCRIPTION		REF DES	
1	800-3026	1		ASSY FUSE BLOCK			
2	834-5000	1		ASSY GAME ELECTRONICS			
3	560-0046	1		ISOLATION XFMR			
4	800-3031	1		ASSY VOL CONT BLOCK			
5	250-0048	1		CLIP SWITCH			
6	800-0072	1		ASSY PWR SUPPLY DUAL			
7	478-0001	1		THERMISTOR			
8	253-0150	2		CONTROL PANEL GRAPHIC			
9	834-0013	1		SLIMLINE CABINET (NO ELECT)			
10	253-0151	1		GRAPHIC COIN INFO			
11	420-0421	2		TABLE GRAPHIC			
12	253-0149	1		GRAPHIC GAME SELECT			
13	252-0078	1		SUPPORT BLOCK REAR A/F UPRIGHT			
14	252-0079	1		SUPPORT BLOCK FRONT A/F UPRIGHT			
15	140-0047	1		GAME BASE, SLIMLINE			
16	252-0081	2		MTG. BLOCK			
17	252-0082	2		BLK STNDFF ISOLATION XFMR			
18	252-0083	3		PWR SUPPLY MTG. BLOCK			
19	280-0004	12		CLIP, WIRE HOLD DOWN			
20		4		# 6 x 1/2" PAN HD. SH. MIL SCREW			
21		6		# 8 x 1" FLAT HD. WOOD SCREW			
22		7		# 8 x 1" PAN HD. SH. MIL SCREW			
23		3		# 10 x 1 3/4" FLT HD WOOD SCREW			
24		2		# 10 x 1/2" PAN HD. SH. MIL SCREW			
25		4		# 8 FLAT WASHER			

Gremlin Industries, Inc.
San Diego, California 92123

PARTS LIST	TITLE GAME, ASTRO FIGHTER SLIMLINE	DWG NO	SH 3 OF 6	A REV
ITEM NO	PART NO	QTY PER ASSY	DESCRIPTION	
26		4	#10 x 2" FLT HD WOOD SCREW	
27	800-3022	1	ASSY MASTER HARN	
28	800-3023	1	ASSY POWER HARN	
29	800-3024	1	ASSY HARN VOL CONTROL	
30	807-0010	1	ASSY HARN SPEAKER	
31	600-0001	1	CORD, LINE, 3 - COND	
32	800-3032	1	ASSY GROUND STRAP	
33	420-0424	1	MANUAL A/F SLIMLINE	



8

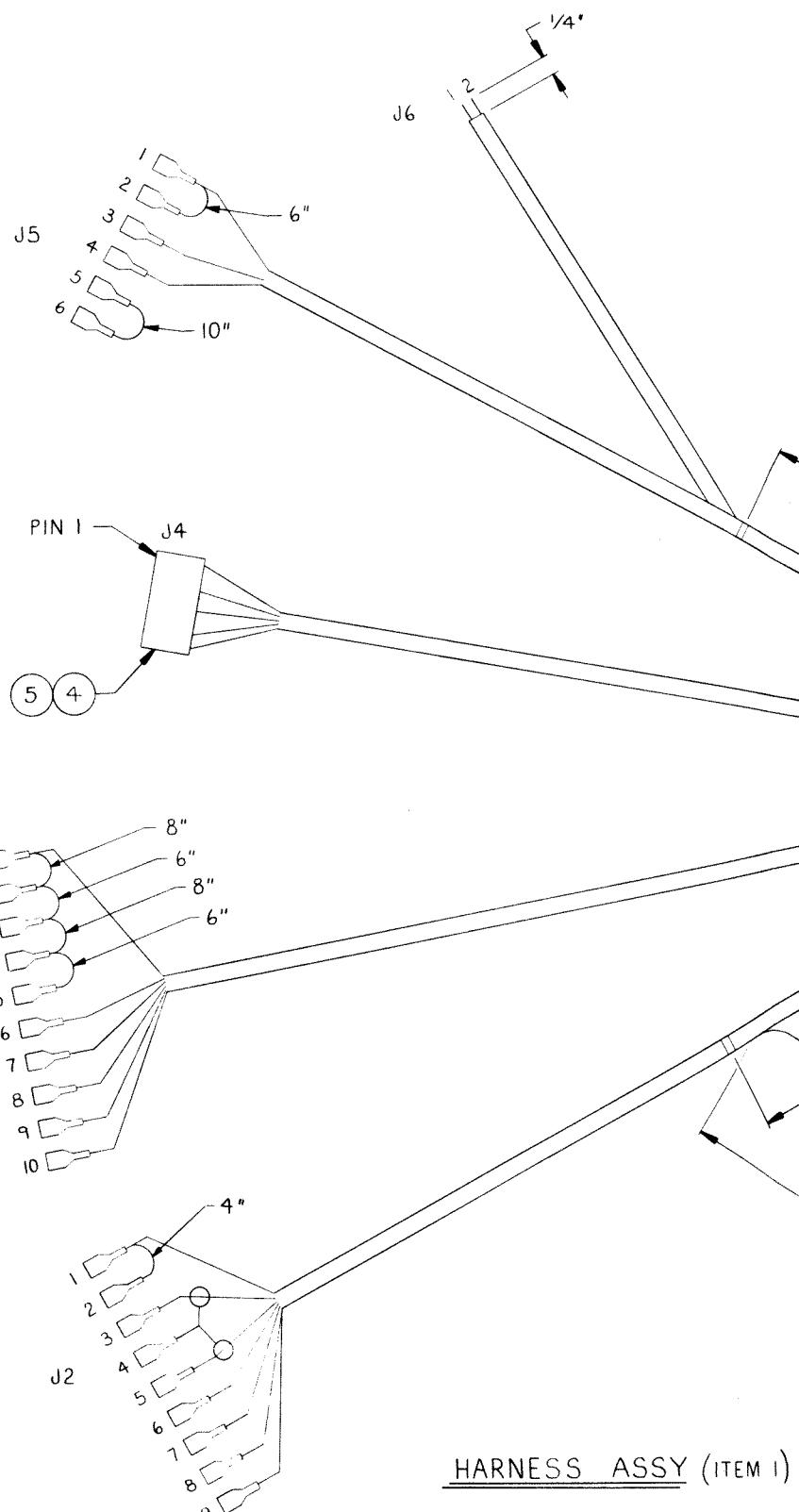
7

6

5

NOTES:

1. SECURE HARNESS USING ITEM 8,
APPROX EVERY 6 INCHES.

D**C****B****A****HARNESS ASSY (ITEM 1)**

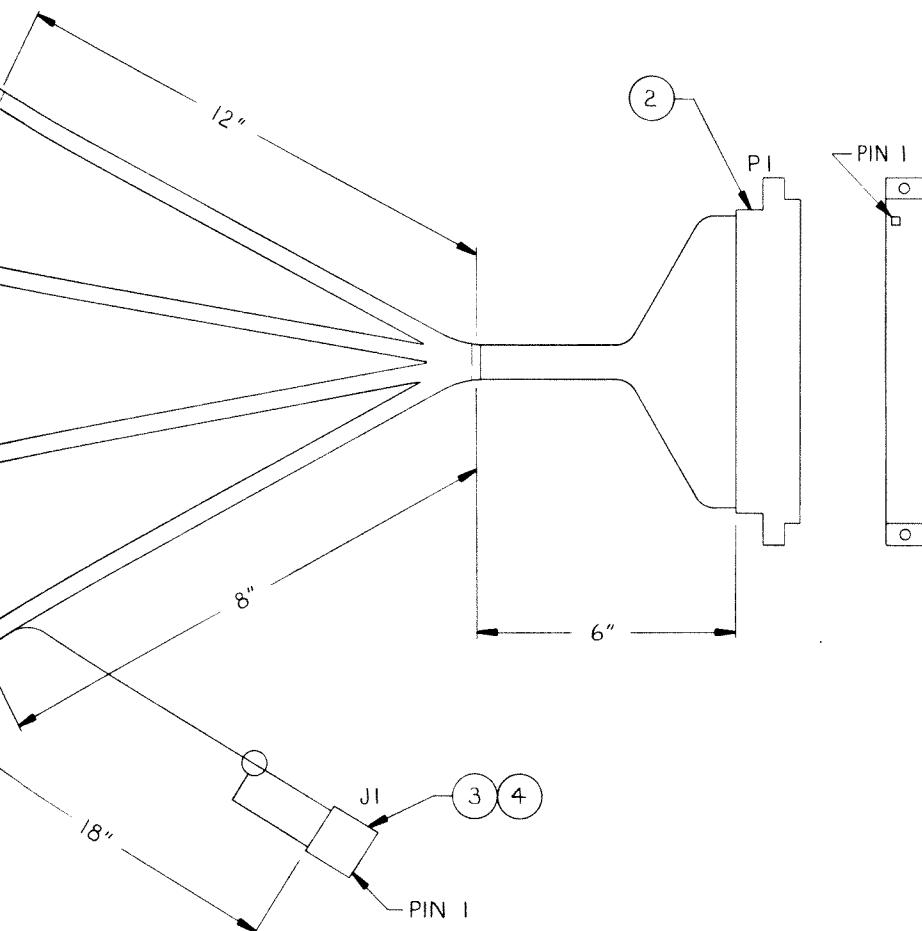
8

7

6

5

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	RELEASED	2-8-80	87

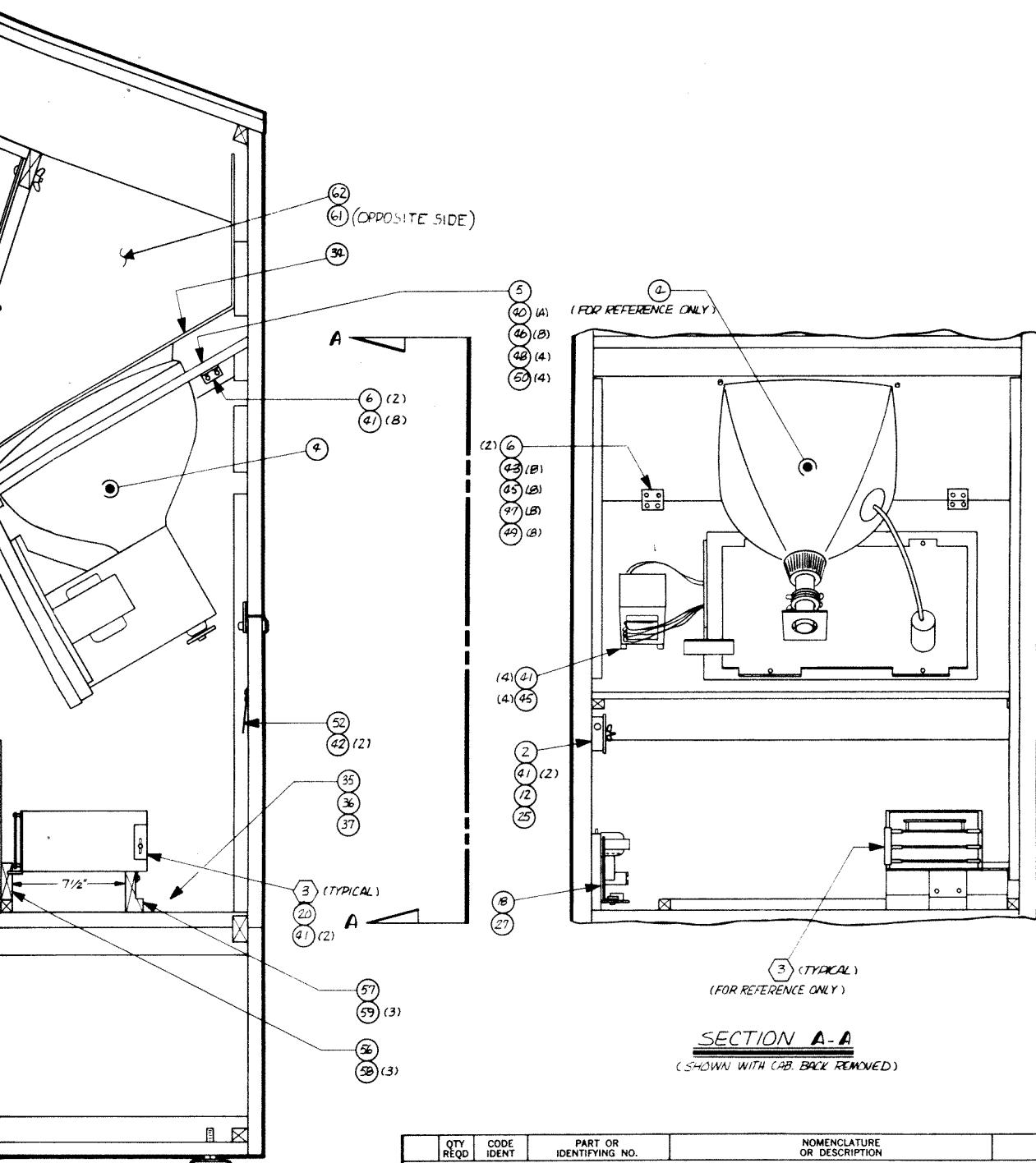


47	J5 - 5	J5 - 6	JUMPER	10
46	J2 - 4	J1 - 1	SHLD.CA.GND	42
45	J2 - 5	J1 - 4	SHLD.CA.WHT	42
44	PI - 22			
43	PI - 21			
42	PI - 20			
41	PI - 19			
40	PI - 18	J2 - 9	WHT / VIO	60
39	PI - 17			
38	PI - 16			
37	PI - 15			
36	PI - 14			
35	PI - 13			
34	PI - 12			
33	PI - 11			
32	PI - 10			
31	PI - 9	J2 - 5	WHT / BLU	60
30	PI - 8	J5 - 3	WHT / GRN	60
29	PI - 7	J2 - 4	SHLD.CA.GND	42
28	PI - 6	J4 - 8	BLK	20
27	PI - 5	J4 - 5	BLU	20
26	PI - 4	J4 - 1	RED	20
25	PI - 3			
24	PI - 2			
23	PI - 1	J2-1,2 J5-4	BLK	60
22	PI - Z	J6 - 2	WHT / YEL	47
21	PI - Y	J6 - 1	WHT / ORN	47
20	PI - X			
19	PI - W			
18	PI - V	J2 - 6	WHT / RED	60
17	PI - U	PI - R	JUMPER	2
16	PI - T	PI - P	JUMPER	2
15	PI - S	PI - N	JUMPER	2
14	PI - R	J3 - 10	WHT / BRN	65
13	PI - P	J3 - 9	WHT / BLK	58
12	PI - N	J3 - 8	GRY	59
11	PI - M	J3 - 7	VIO	66
10	PI - L	J3 - 6	YEL	61
9	PI - K	J2 - 7	ORN	60
8	PI - J	J5 - 1,2	BRN	60
7	PI - H	J2 - 3	SHLD.CA.WHT	42
6	PI - F	J4 - 7	WHT	20
5	PI - E	J4 - 3	GRN	20
4	PI - D			
3	PI - C			
2	PI - B			

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES		CONTRACT NO. Gremlin Industries, Inc. San Diego, California 92123		
\pm \pm \pm		APPROVALS	DATE	
MATERIAL NOTED		DRAWN MAHONEY	2-6-80	ASSY HARNESS MASTER AF
FINISH		CHECKED <i>St. J. Fay</i>	2-8-80	SIZE CODE IDENT NO. DRAWING NO. D 800 - 3010 A
DO NOT SCALE DRAWING		SCALE NONE	SHEET 3 OF 3	

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED		2-8-80	MF



D

C

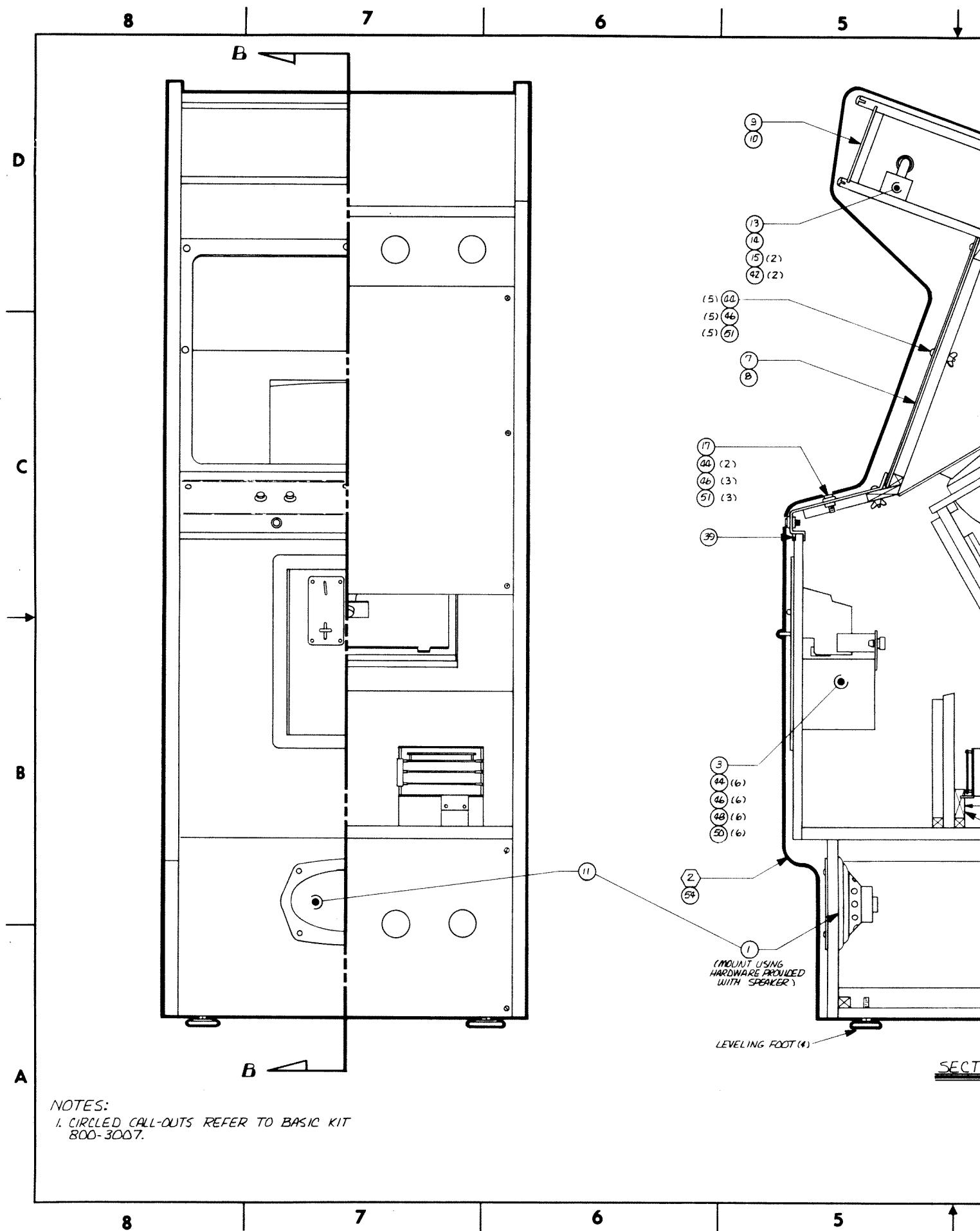
B

A

700-0005 A

A

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION			
PARTS LIST						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES \pm XX \pm \pm XXX \pm	CONTRACT NO.	Gremlin Industries, Inc. San Diego, California 92123				
MATERIAL NOTED	APPROVALS	DATE	TOP ASSEMBLY			
FINISH	DRAWN R. Hawtree	2-8-80	ASTRO FIGHTER			
NEXT ASSY	USED ON	CHECKED H. F. Fay	2-8-80	REV. A		
APPLICATION	DO NOT SCALE DRAWING	SHEET 3 OF 5	SIZE D	CODE IDENT NO. 700-0005		
		SCALE NONE				



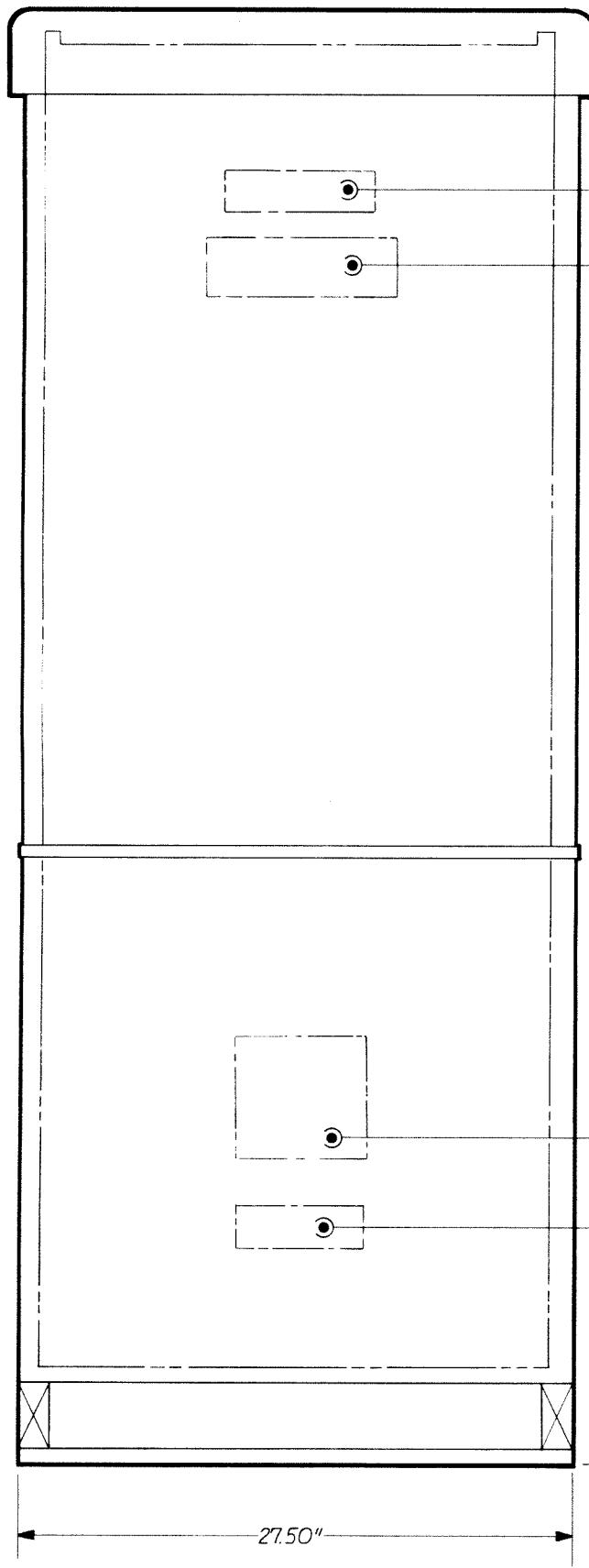
8 7 6 5

D

C

B

A



CONTAINER DETAIL

NOTES:

1. CIRCLED CALL-OUTS REFER TO BASIC KIT 800-3007

8 7 6 5

4

3

2

1

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED		2-8-80	SP

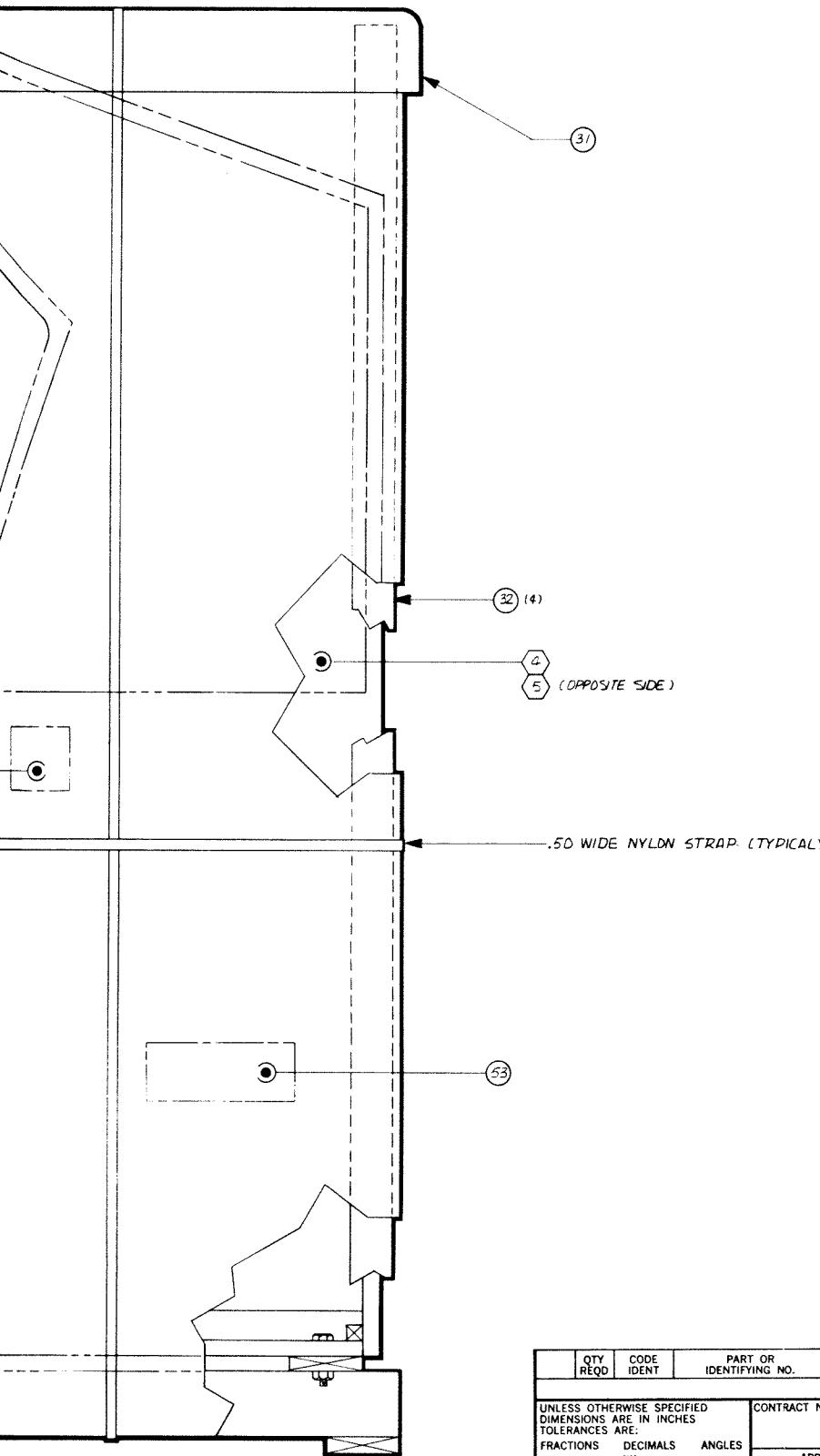
D

C

B

700-0005 A

A



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES \pm .XX \pm \pm \pm XXX \pm			CONTRACT NO.	Gremlin Industries, Inc. San Diego, California 92123
MATERIAL NOTED			APPROVALS	DATE
FINISH			DRAWN <i>Ron Hawtree</i>	2-8-80
NEXT ASSY USED ON APPLICATION			CHECKED <i>Stan J. Fay</i>	2-8-80
DO NOT SCALE DRAWING			SIZE D	CODE IDENT NO. DRAWING NO. 700-0005
			SCALE NONE	REV. A SHEET 4 OF 5

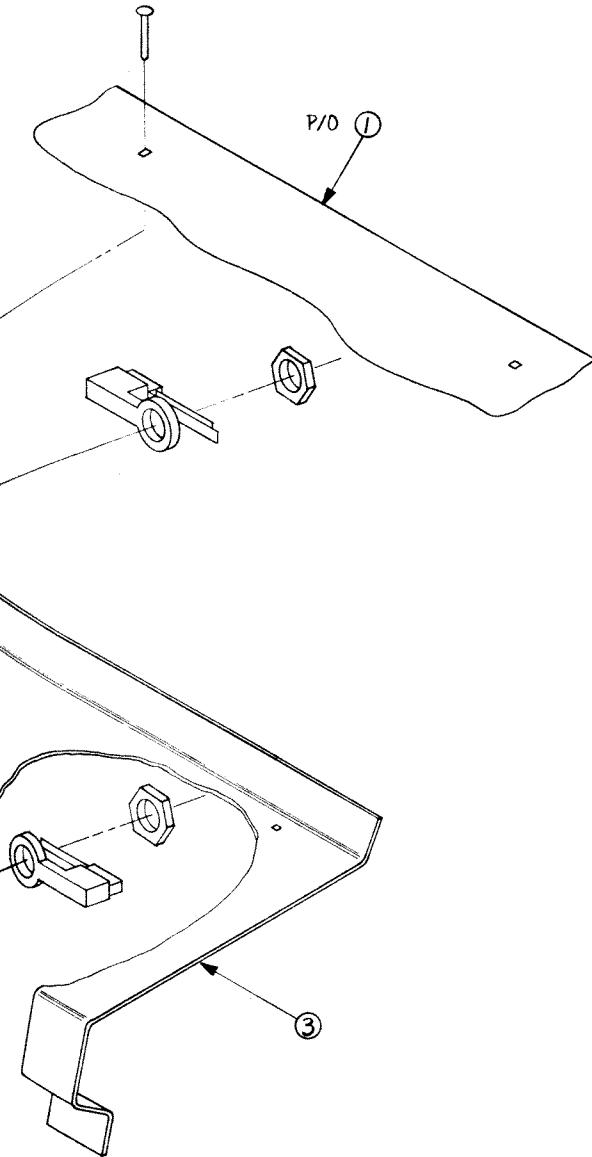
4

3

2

1

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
	A	RELEASED	J.M 2-8-80
	B	CHG'D PER ECN 378	SB 3-10-80



D

C

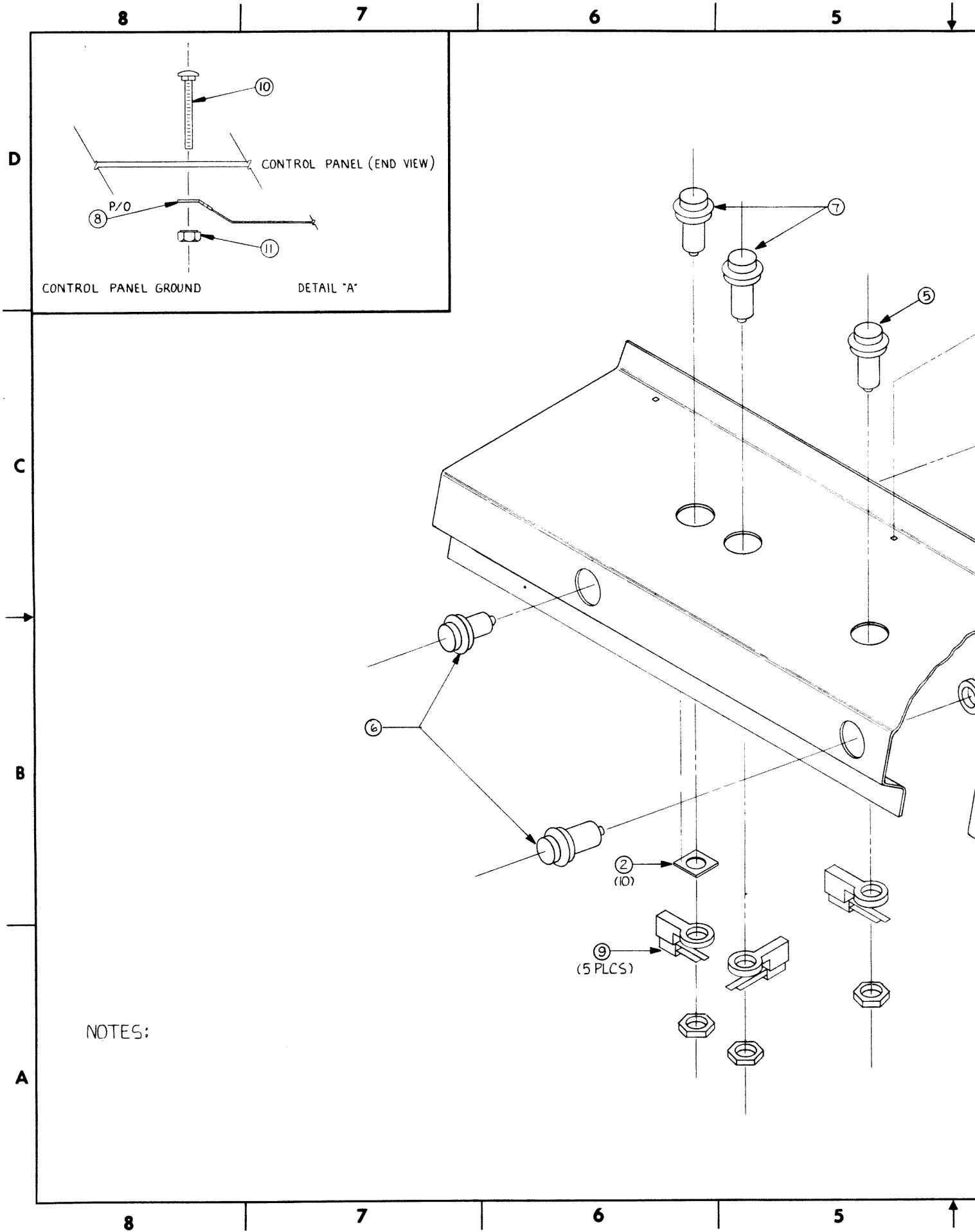
B

A

800-3009 B

800-3009

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .XX ± ± XXX ±		CONTRACT NO.	Gremlin Industries, Inc. San Diego, California 92123	
MATERIAL		APPROVALS	DATE	ASSEMBLY CONTROL PANEL ASTRO FIGHTER
		DRAWN MAHONEY	2-8-80	
		CHECKED <i>[Signature]</i>	2-8-80	
FINISH				
NEXT ASSY	USED ON	SIZE	CODE IDENT NO.	DRAWING NO.
APPLICATION	DO NOT SCALE DRAWING	D		800-3009
		SCALE NONE		REV. B
			SHEET 3 OF 3	



D

HOLDER, FUSE
PANEL MOUNT
P/N: 514-0005
FUSE, 2A SLO-BLO
P/N: 514-0001

C

B

BRACKET, SWITCH
P/N: 250-0390

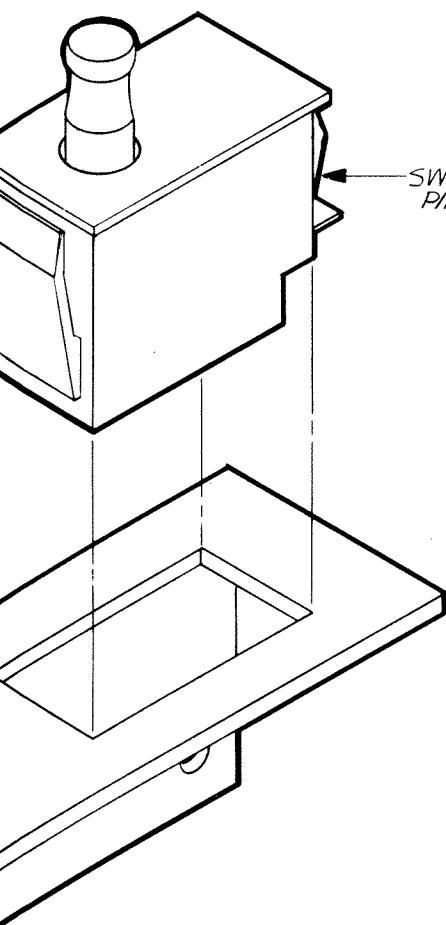
A

P/O FUSEHOLDER

NOTES:  ALL QUICK CONNECTS TO BE
SECURED TO WIRE WITH SHRINK
TUBING

		A/F CTR
NEXT ASSY	USED ON	
APPLICATION		

REVISIONS					
ZONE	LTR	DESCRIPTION	DATE	APPROVED	
	A	RELEASED	2-13-80	X	
	A	B.O.M. CHG. (WIRE NUT P/N)	3-27-80	X	



SWITCH, SPDT, CHERRY®
PIN: 510-0013

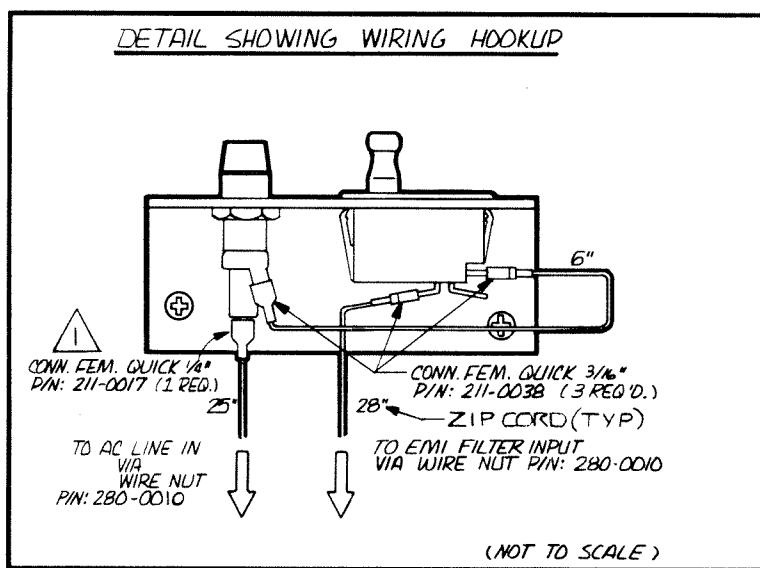
D

C

800-3026 A

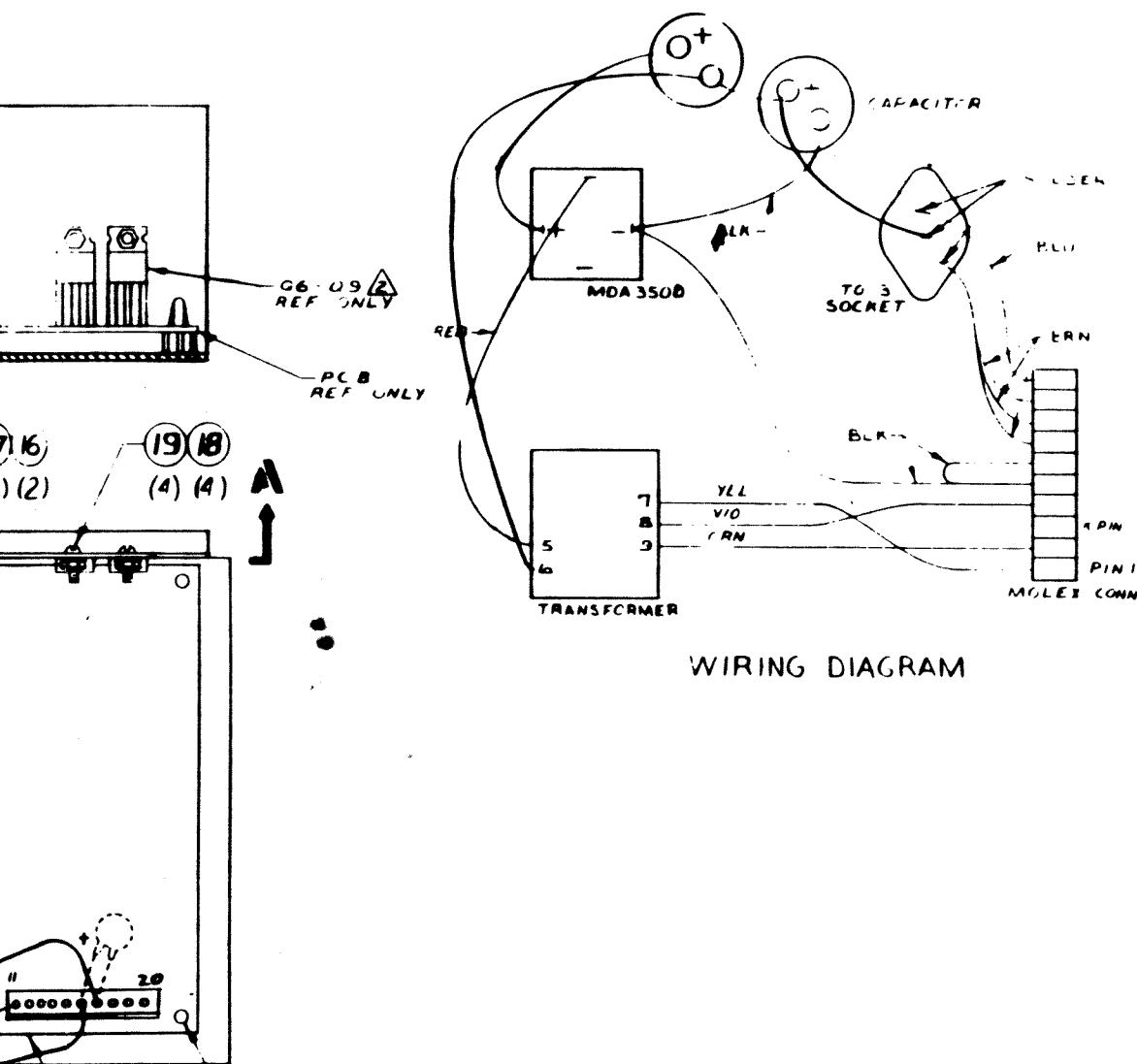
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A



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION		
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± XX ± ± XXX ±		CONTRACT NO.		Gremlin Industries, Inc. San Diego, California 92123	
MATERIAL		APPROVALS		DATE	
NOTED		DRAWN <i>Ron Hawhee</i> 2-13-80		CHECKED <i>John Compton</i> 2-13-80	
FINISH		ASS'Y. FUSE BLOCK			
CAT. ON	SIZE		CODE IDENT NO.	DRAWING NO.	REV.
DO NOT SCALE DRAWING		C		800-3026	A
SCALE 2X		SHEET / OF /			

		REVISIONS		
REV	LW	DESCRIPTION	DATE	APPROVED
A	RELEASED	WJB	12-3-79	
A	INITIAL P/N	40110	1-1-80	JL



-15

-9(2)
(4)(4)

SEE DETACHED PARTS LIST

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NAME & ADDRESS OR DES. DATA
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONAL INCHES DECIMALS ANNELED		CONTRACT NO.	Grenada Electronics, Inc. San Diego, California 92108
2 IN - 1 IN - 2		APPROVALS DATE 12-3-79 12-3-79	ASSEMBLY POWER SUPPLY DUAL GAMES
MATERIAL MATERIAL APPLICATION		SIZE D CODE IDENT NO. F/C-1077 DRAWING NO. REV B	SHEET 3 OF
DO NOT SCALE DRAWING		SCALE 1:1	

8

7

6

5

D

RED F

(4)(6)

C

TO C18 (+)

TO C18 (-)

RED 6.5

3'

STRIP BACK APPROX 15'

Z 10 17 16
(2)(2)

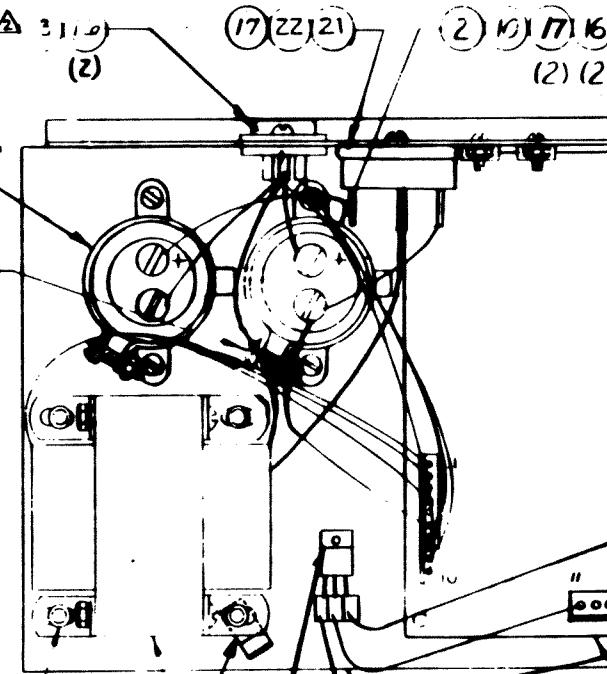
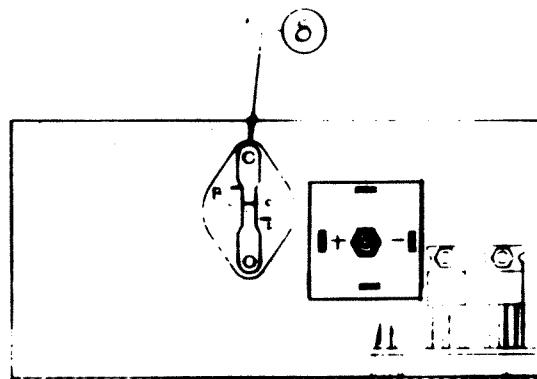
17 16

ALUG C
BRN 6.5
BRN 6.5
BRN 6.5
BLK (JUMPER) 15'
BLK E
VIL 6.5
WHT
BRN 6.5
TEL 6.5

PIN 16

3 (9)

4
7

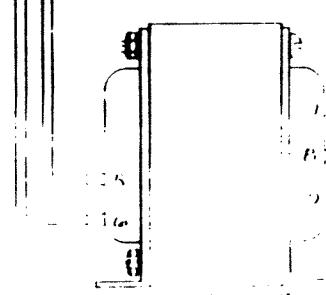


20
(4)

24
(4)

11

A



ALL STARS TO BE MOUNTED WITH
SILICONE PASTE & INSULATING HARDWARE
SILICONE PASTE BE AWS#22 SA
THERWISE SPECIFIED

7

6

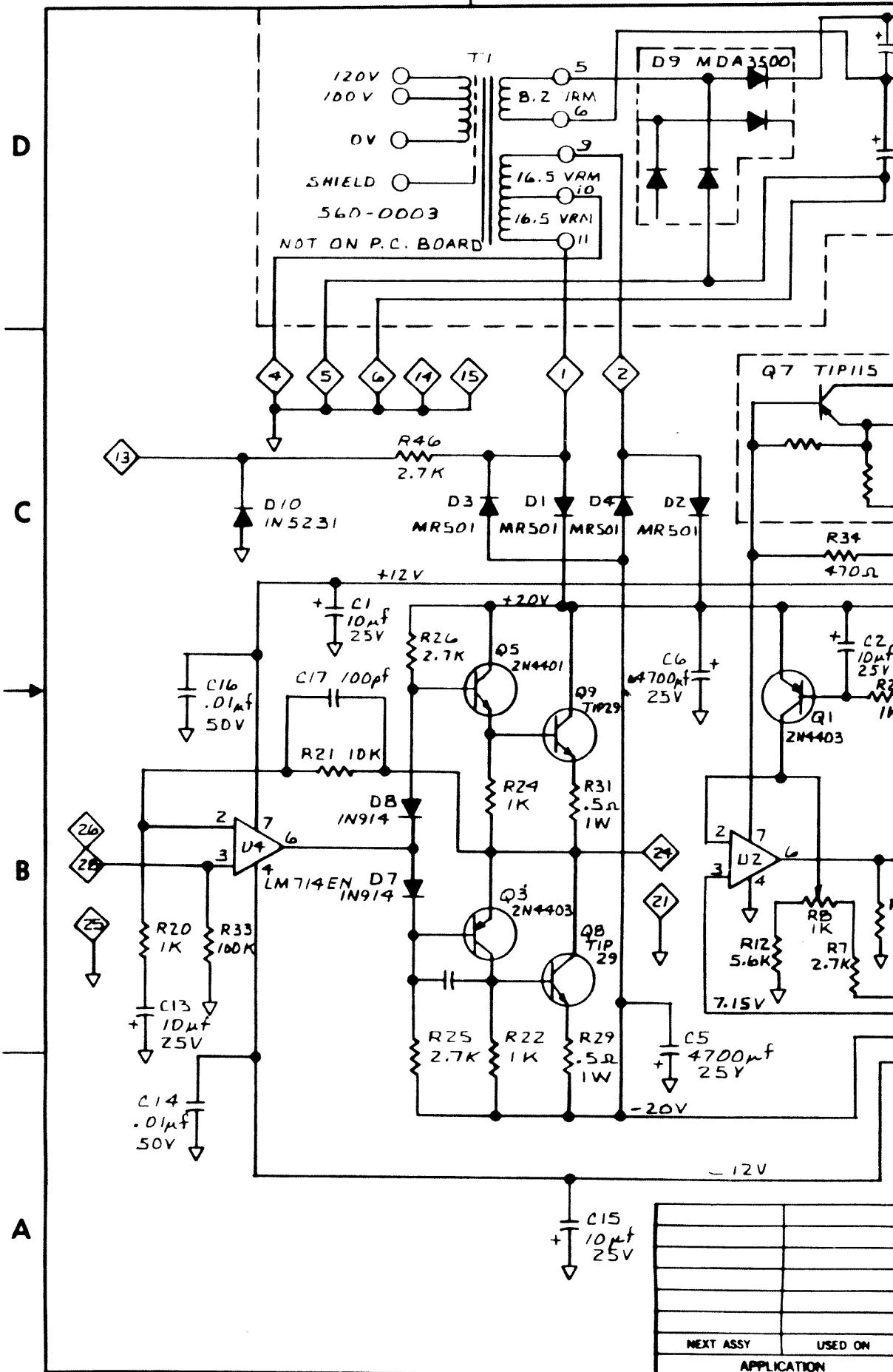
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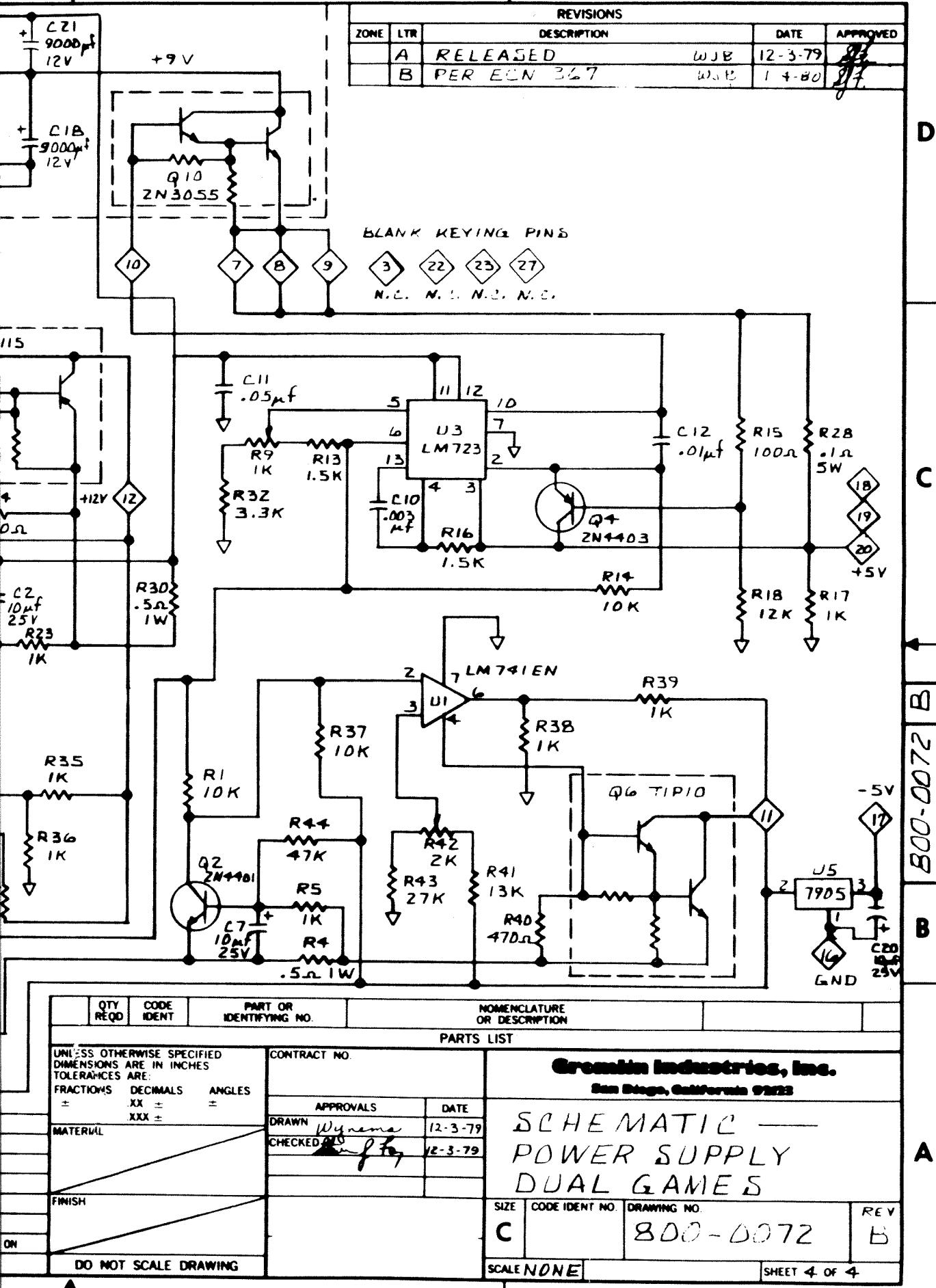
D

C

B

A





4

3

2

1

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED	J.M	2-17-80	20

D

C

B

A

700-0007 A

(19) (22) (23)
(2) (2)

NEXT ASSY	USED ON
APPLICATION	DO NOT SCALE DRAWING

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION			
PARTS LIST						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES		CONTRACT NO.		Gremlin Industries, Inc. <i>San Diego, California 92123</i> ASTRO FIGHTER COCKTAIL		
\pm .XX \pm \pm XXX \pm		APPROVALS	DATE			
MATERIAL		DRAWN MAHONEY	2-14-80	D CODE IDENT NO. DRAWING NO. 700-0007 A		
FINISH		CHECKED	2-17-80			
		SCALE NONE		SHEET 4 OF 5		

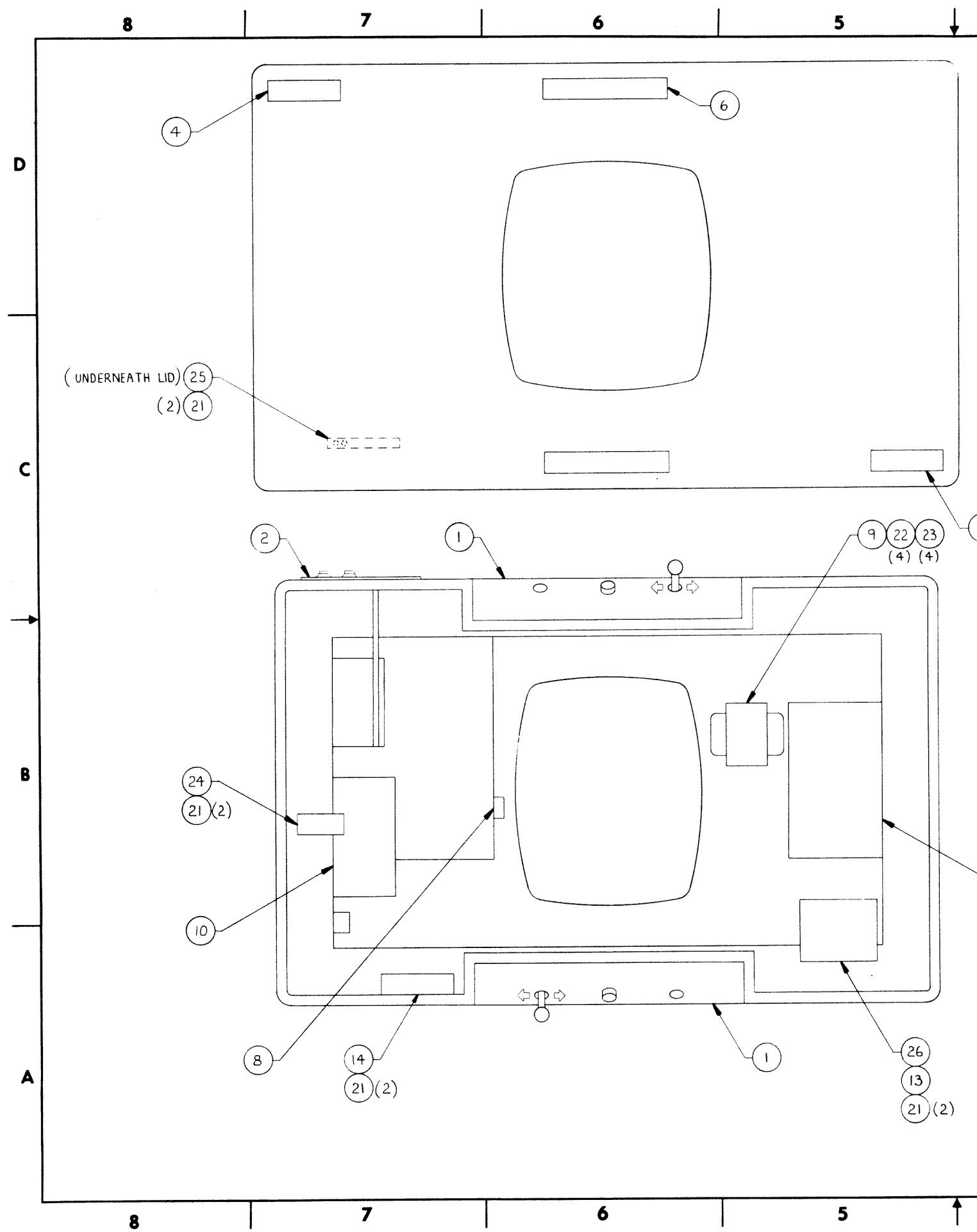
4

3

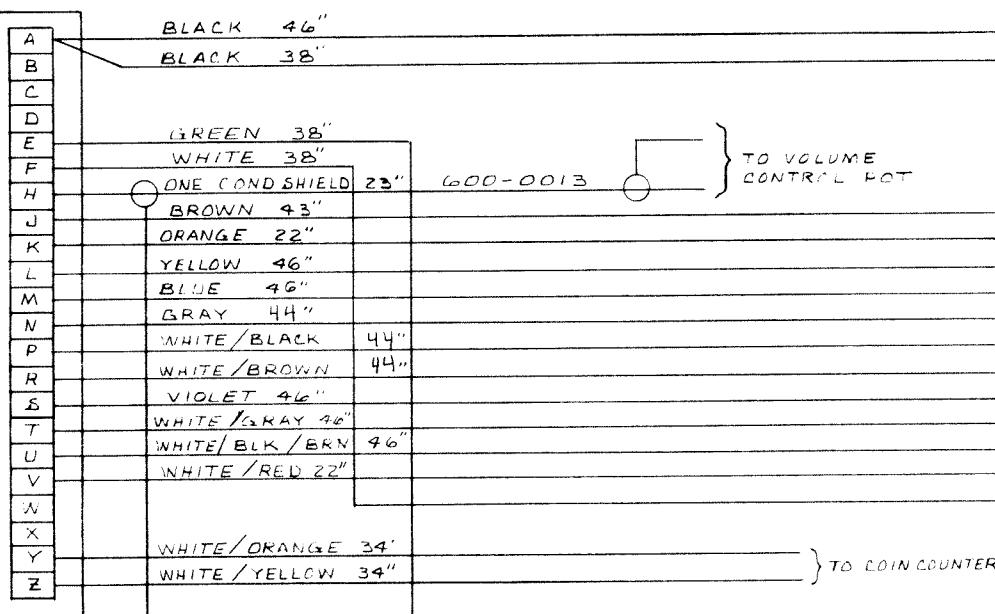
2

1

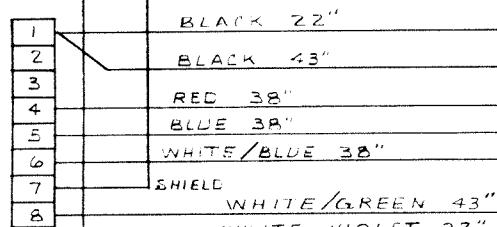
A



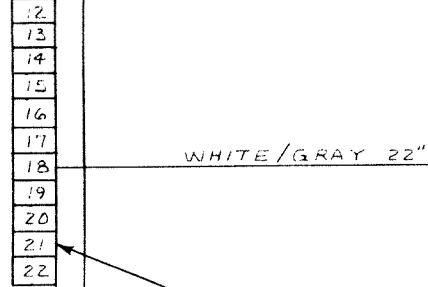
D



C



B



CONN 4-9 PIN
CARD EDGE
211-11550
(1 PLATE)

A

3. SOLDER CONNECTIONS
2. ALL WIRE 22 GA.
1. TURN AND S. KFB BACK 1/4"

NOTES:

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
A	RELEASED	WJB 2-12-80	2

D

TO PLAYER 2

C

B

A

A

PLAYER 1

1 PLAYER
2 PLAYERS
RIGHT }
LEFT }
FIRE }

RIGHT }
LEFT }
FIRE }

REF ONLY
(NO)
(C)
(NO)

RE-SET

REF ONLY
(NC)

COIN SWITCH

REF ONLY
(NC)

SERVICE SWITCH

BLACK +"

(C)
(NO)

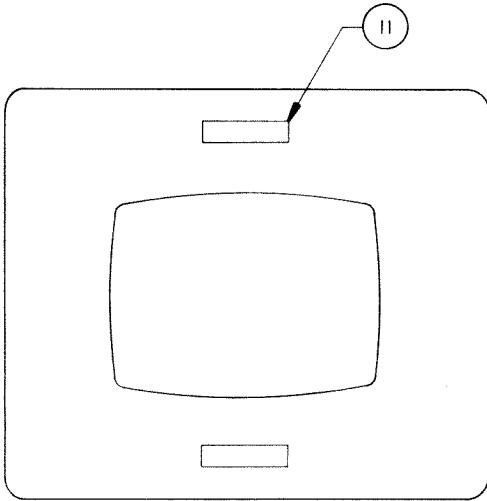
NEXT ASSY	USED ON
APPLICATION	DO NOT SCALE DRAWING

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES		CONTRACT NO.		Gremlin Industries, Inc. San Diego, California 92123
$\pm .XX$ $\pm .XXX$		APPROVALS	DATE	
MATERIAL		DRAWN <i>W. J. B.</i>	2-12-80	
FINISH		CHECKED <i>W. J. B.</i>		
SIZE	CODE IDENT NO.	DRAWING NO.	REV	
D			A	
SCALE NONE		SHEET 1 OF 1		

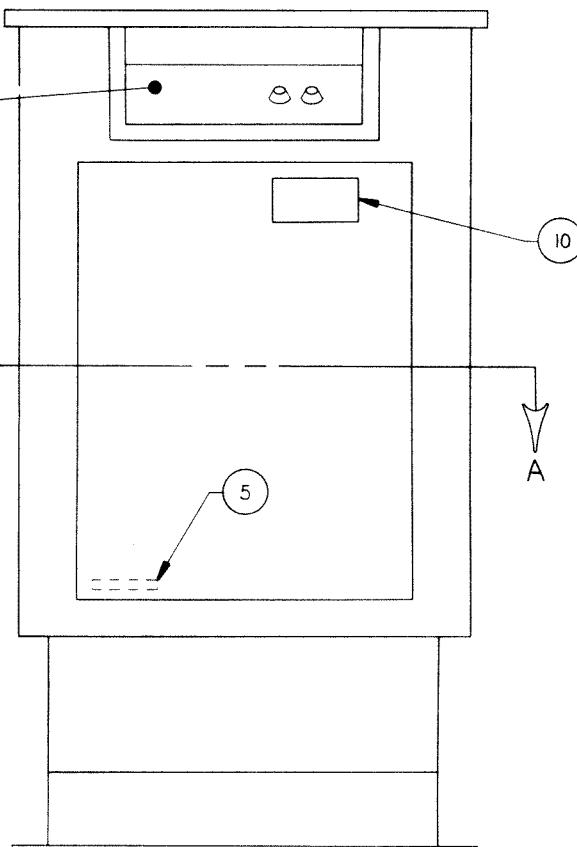
CONN CAP AMP
211-0046
CONN PIN AMP
211-0041
(5 PLACED)

REVISIONS

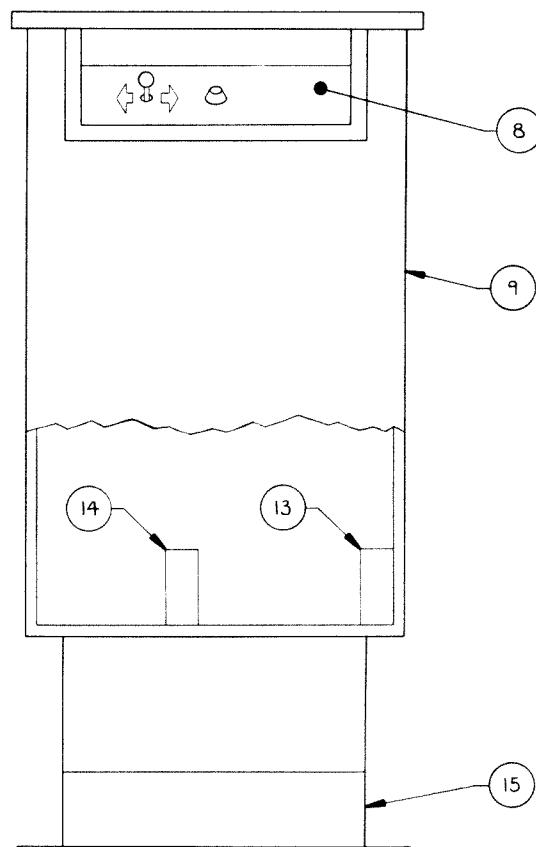
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED		3-3-80	(RC)



D



C



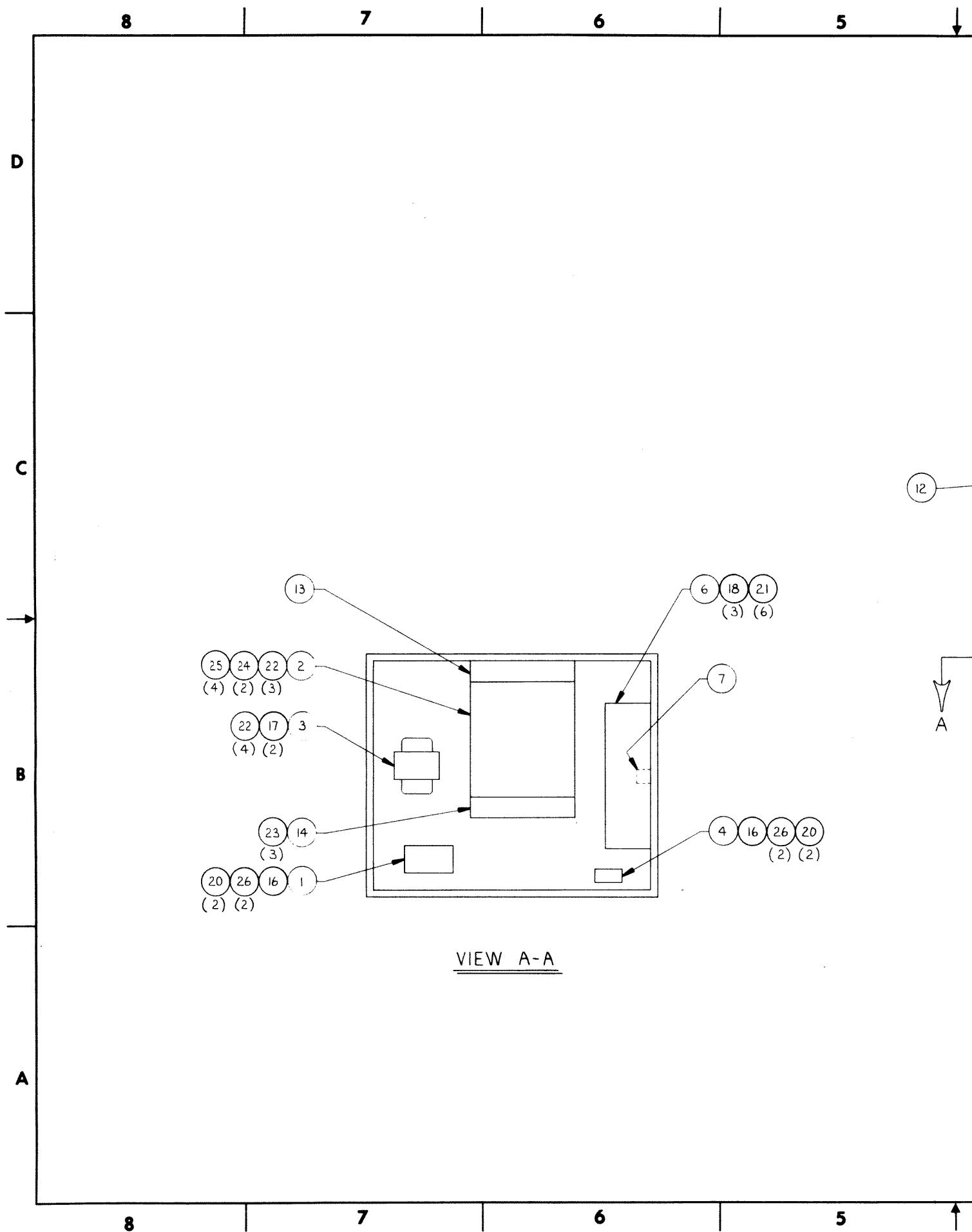
B

A

700-0008

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION		
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES		CONTRACT NO.		Gremlin Industries, Inc. San Diego, California 92123	
± .XX	± .XX	APPROVALS	DATE		
± .XXX	± .XXX	DRAWN MAHONEY	2-29-80		
MATERIAL		CHECKED <i>[Signature]</i>	2-29-80		
FINISH				ASSY, TOP GAME, SLIMLINE ASTRO FIGHTER	
NEXT ASSY	USED ON	SIZE	CODE IDENT NO.	DRAWING NO.	REV
APPLICATION	DO NOT SCALE DRAWING	D	700-0008		A
SCALE 1/4		SHEET 4 OF 6			

A



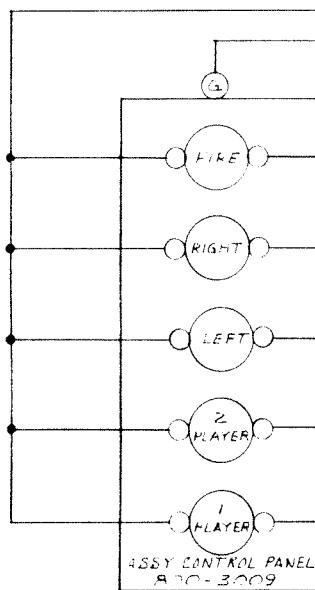
8

7

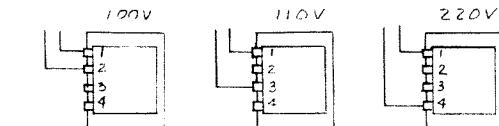
6

5

D

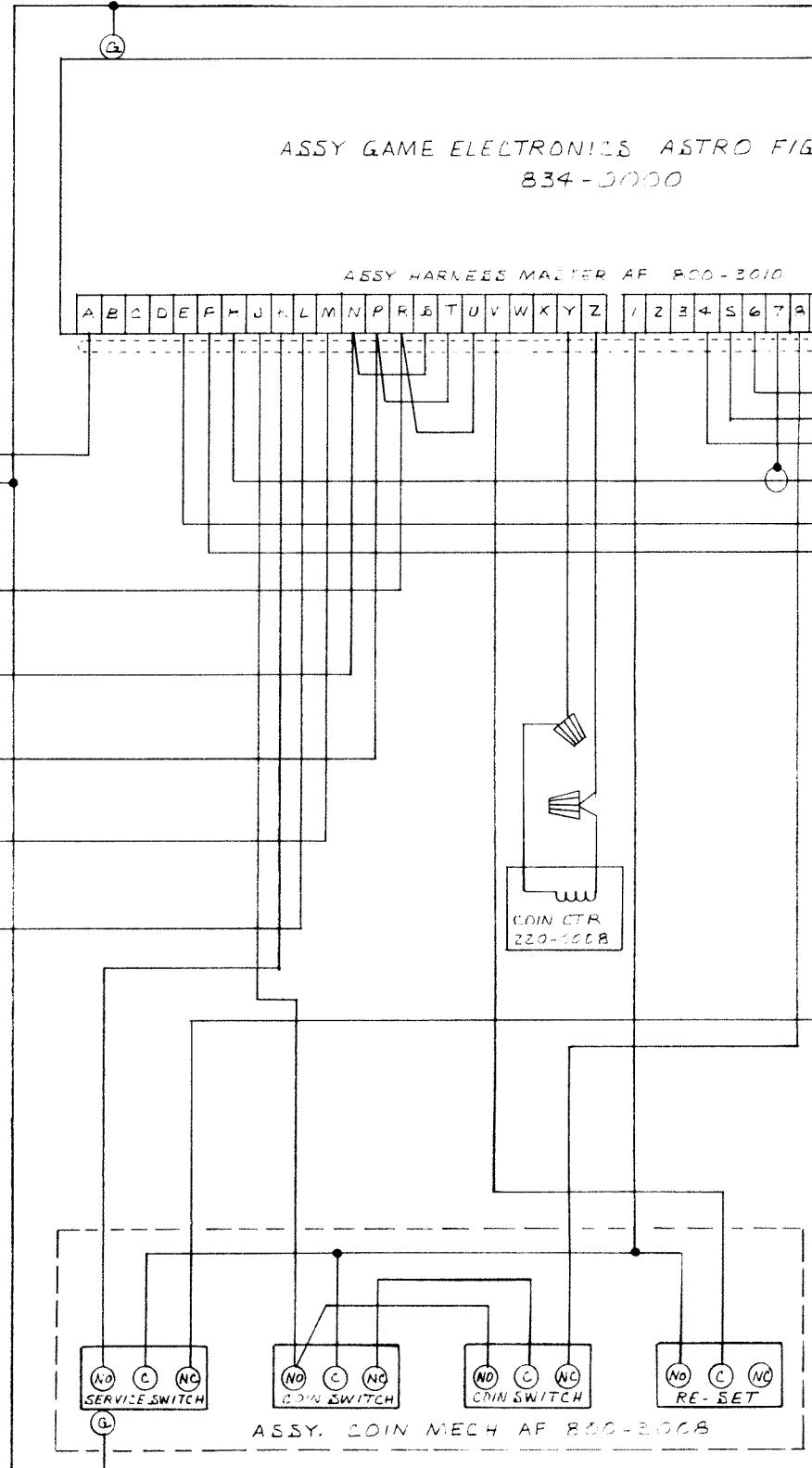


B



A

⚠ TRANSFORMER OPTIONS:



8

7

6

5

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED		WJB 2-11-80	84

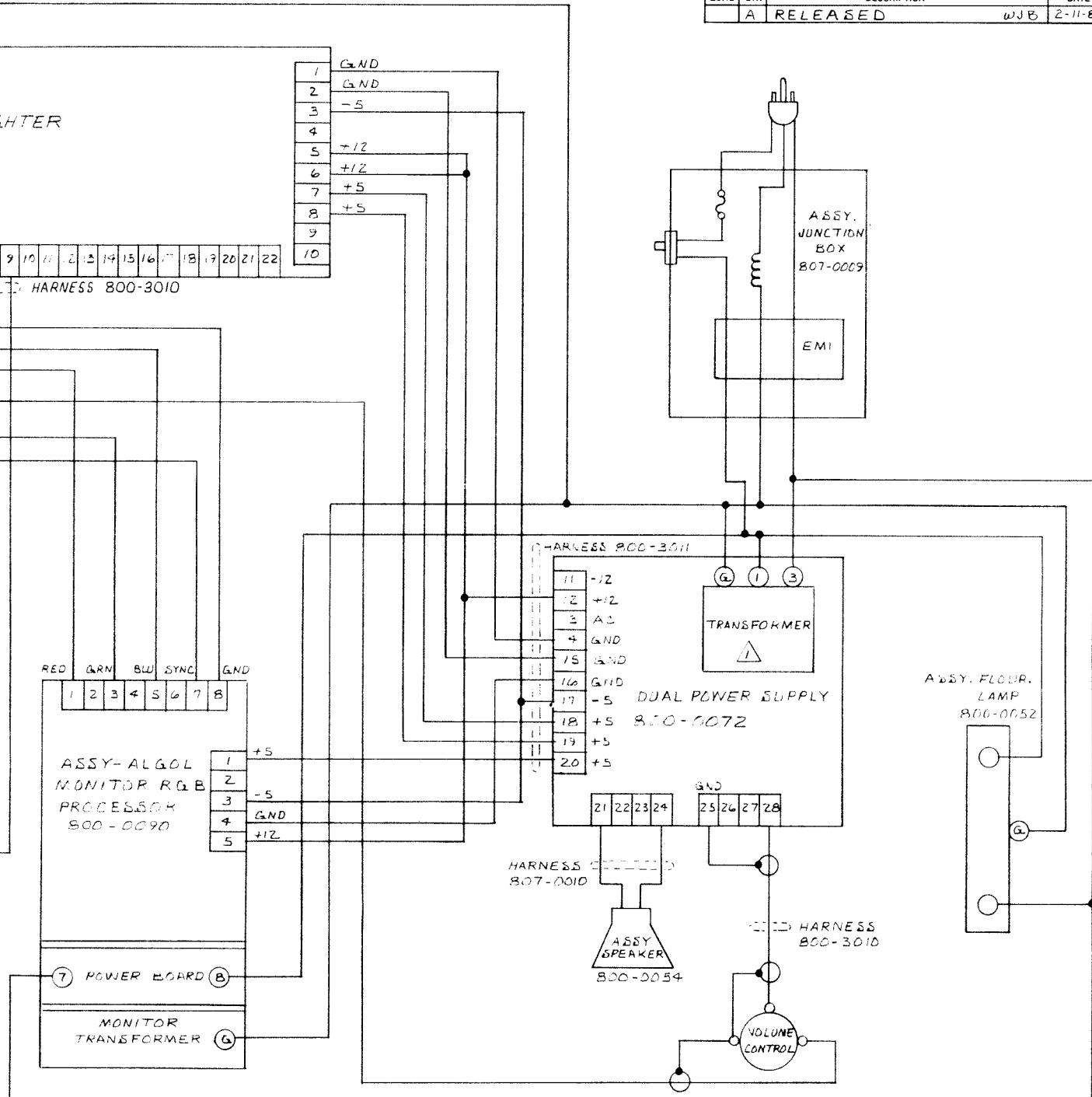
FIGHTER

D

C

B

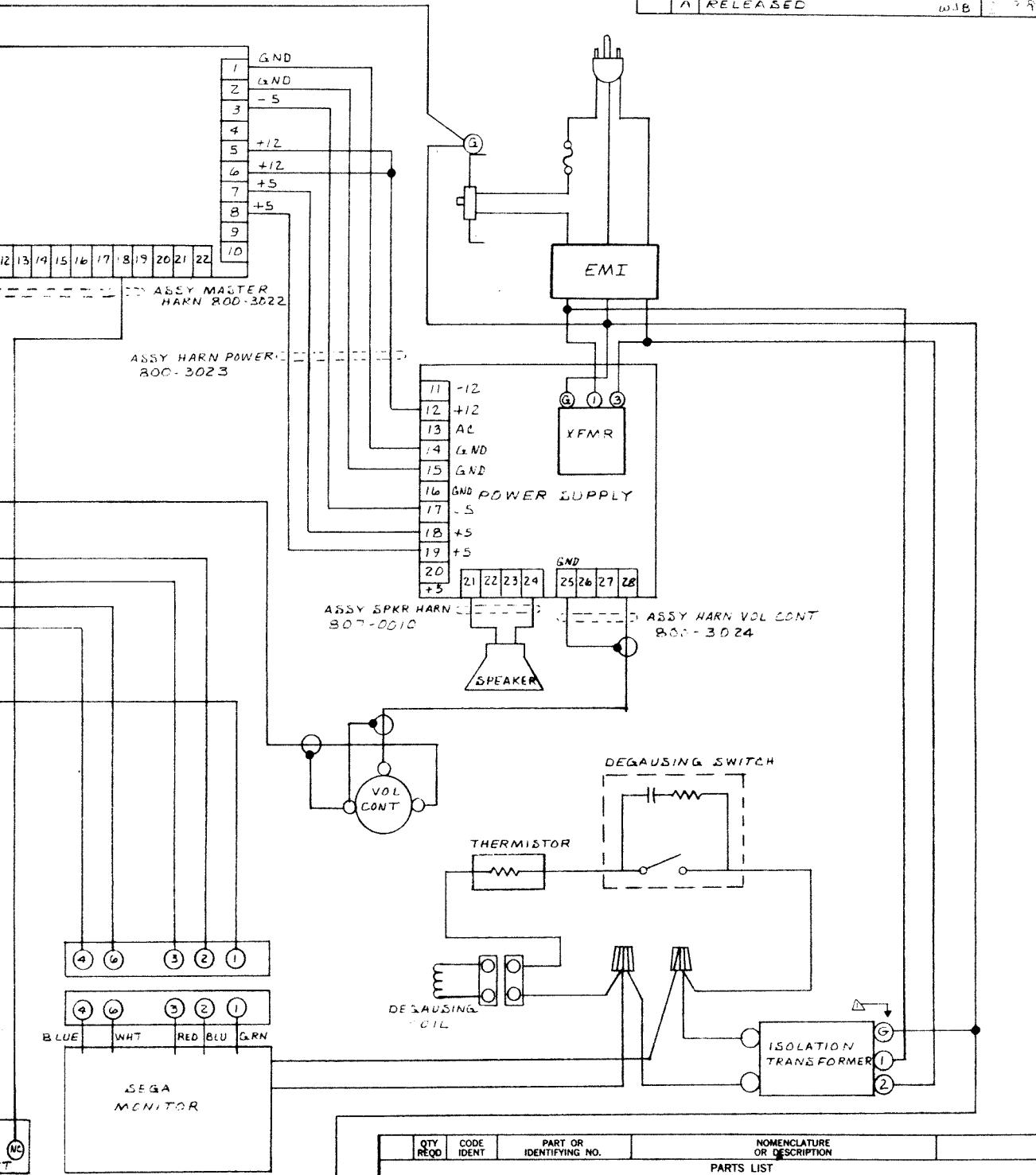
A



QTY REQ'D	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± XX ± XXX ±		CONTRACT NO.	Gremlin Industries, Inc. San Diego, California 92123	
MATERIAL		APPROVALS	DATE	
FINISH		DRAWN <i>M. Menna</i>	2-11-80	
NEXT ASSY		CHECKED <i>Stan Foy</i>	2-11-80	
APPLICATION		DO NOT SCALE DRAWING		
SCALE NONE		DRAWING NO.	700-0005	REV A
TOP ASSEMBLY — ASTRO FIGHTER WIRING DIAGRAM				

0-3027

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
A	RELEASED	W.I.B.	1-29-80



8

7

6

5

ASSY GND CABLE 830-3A

G

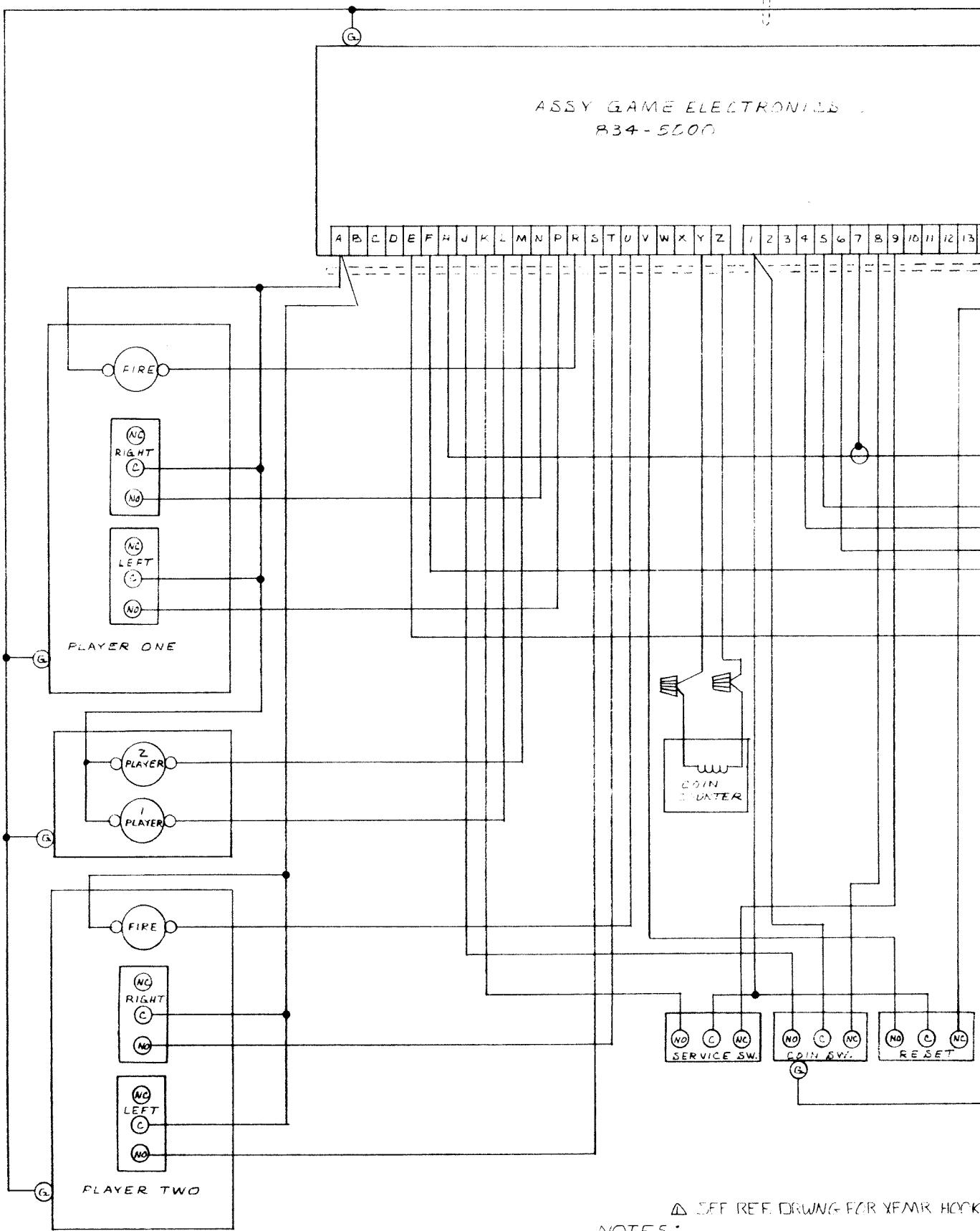
D

ASSY GAME ELECTRONICS
834-5000

C

B

A



△ OFF REF DRAWING FOR XEMR HOCK
NOTES:

8

7

6

5

↑

8

7

6

5

ASSY GND CABLE
GND

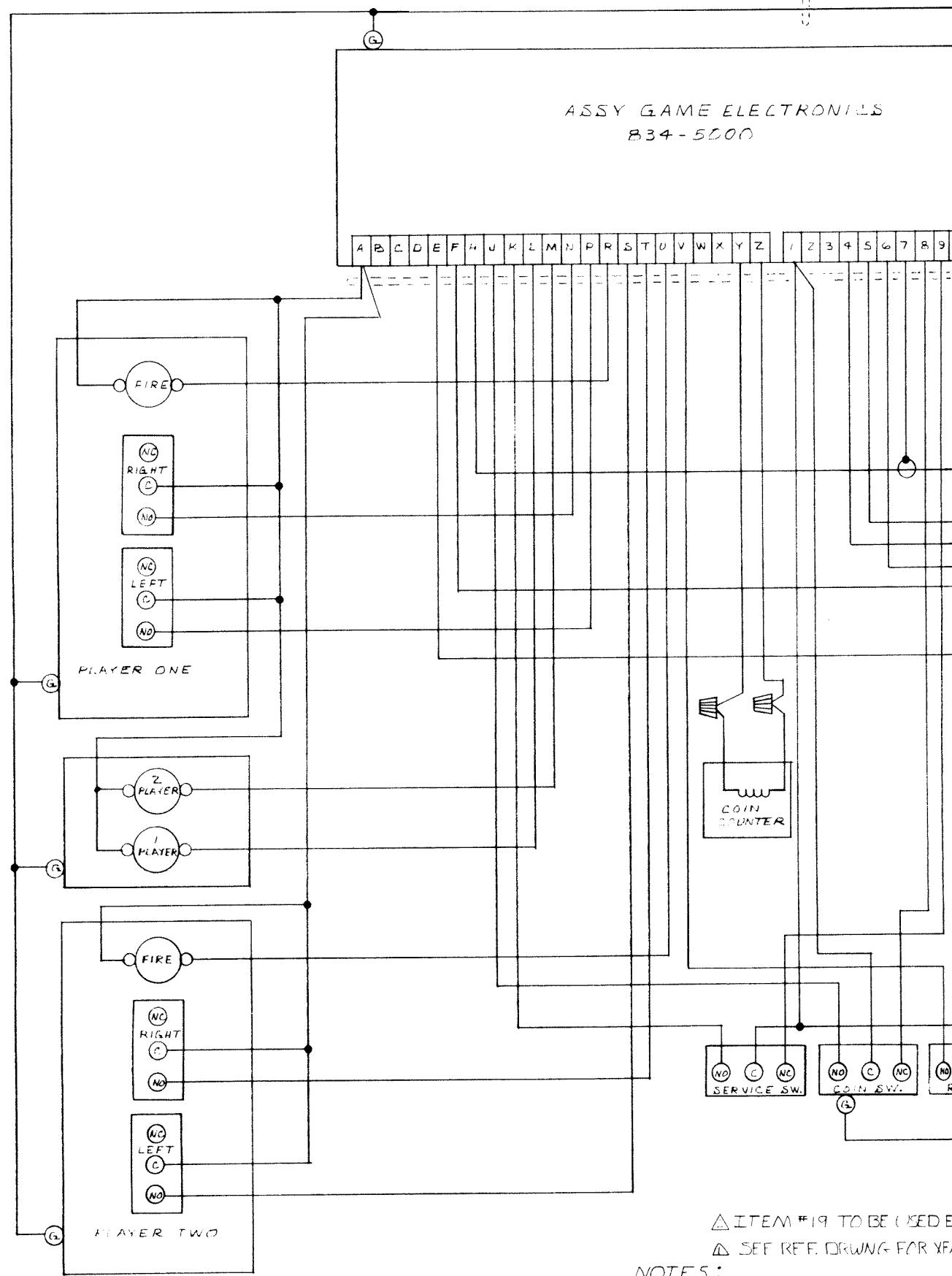
D

ASSY GAME ELECTRONICS
B34-5000

C

B

A



8

7

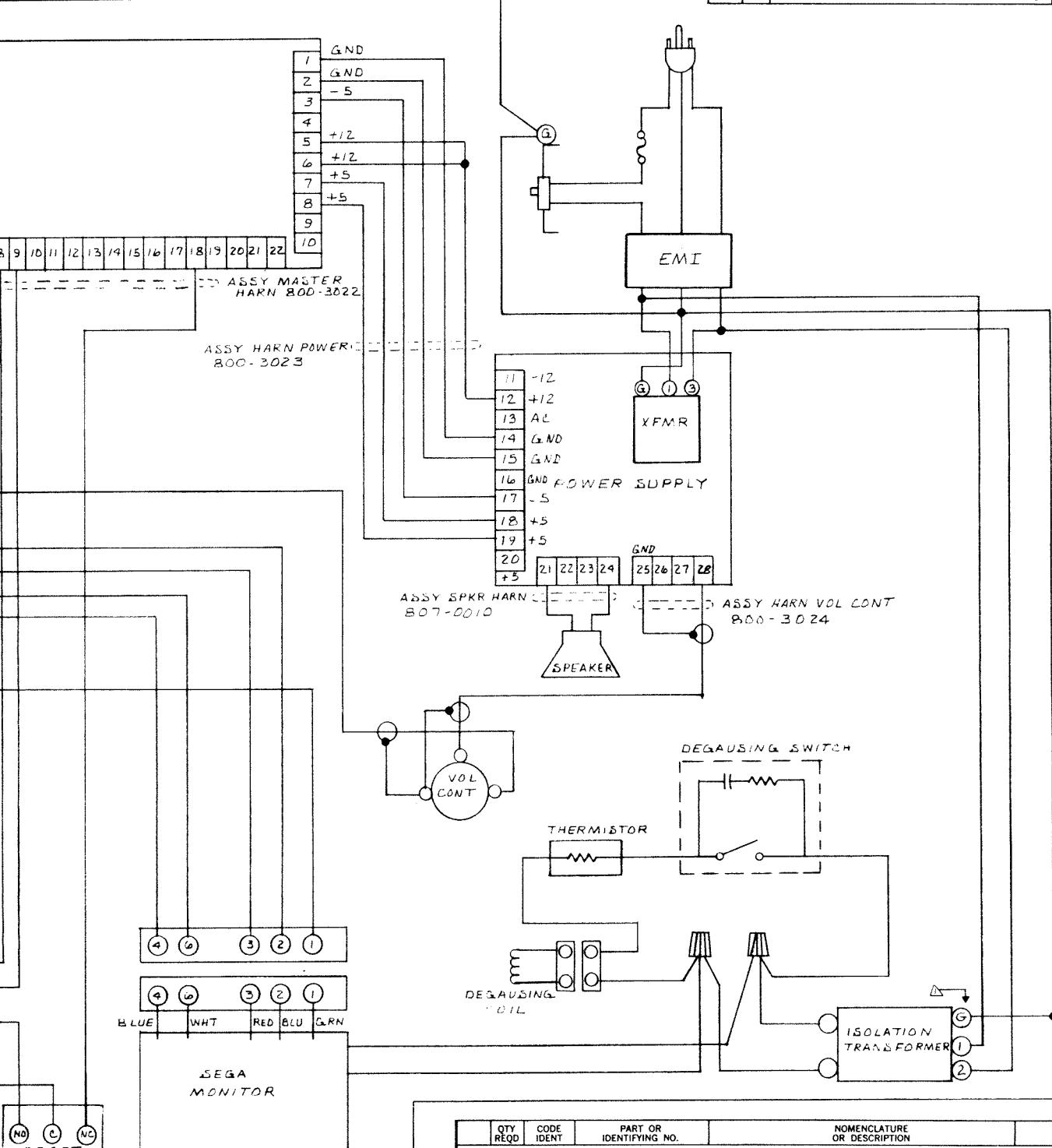
6

5

TABLE 800-3032

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED		WJB 2-26-80	(initial)

D EVERY 10" ON CAGE SIDES
YFMTR HOOKUP

4 3 2 1

WIRING DIAGRAM
ASTRO FIGHTER
SLIMLINE

700-0008 A

SHEET 6 OF 6

D

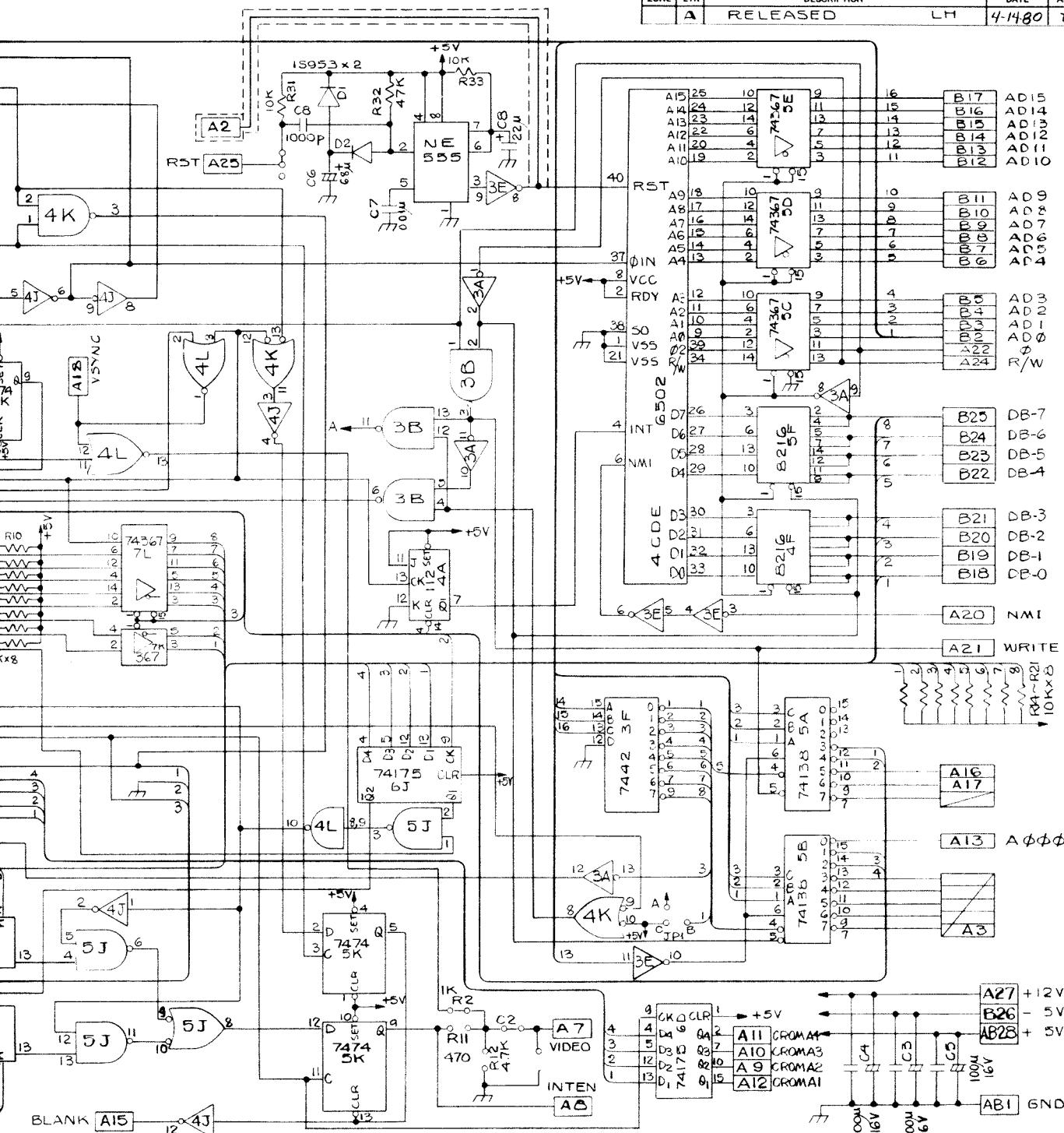
C

B

A

A

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	RELEASED	LH 4-14-80	TJ



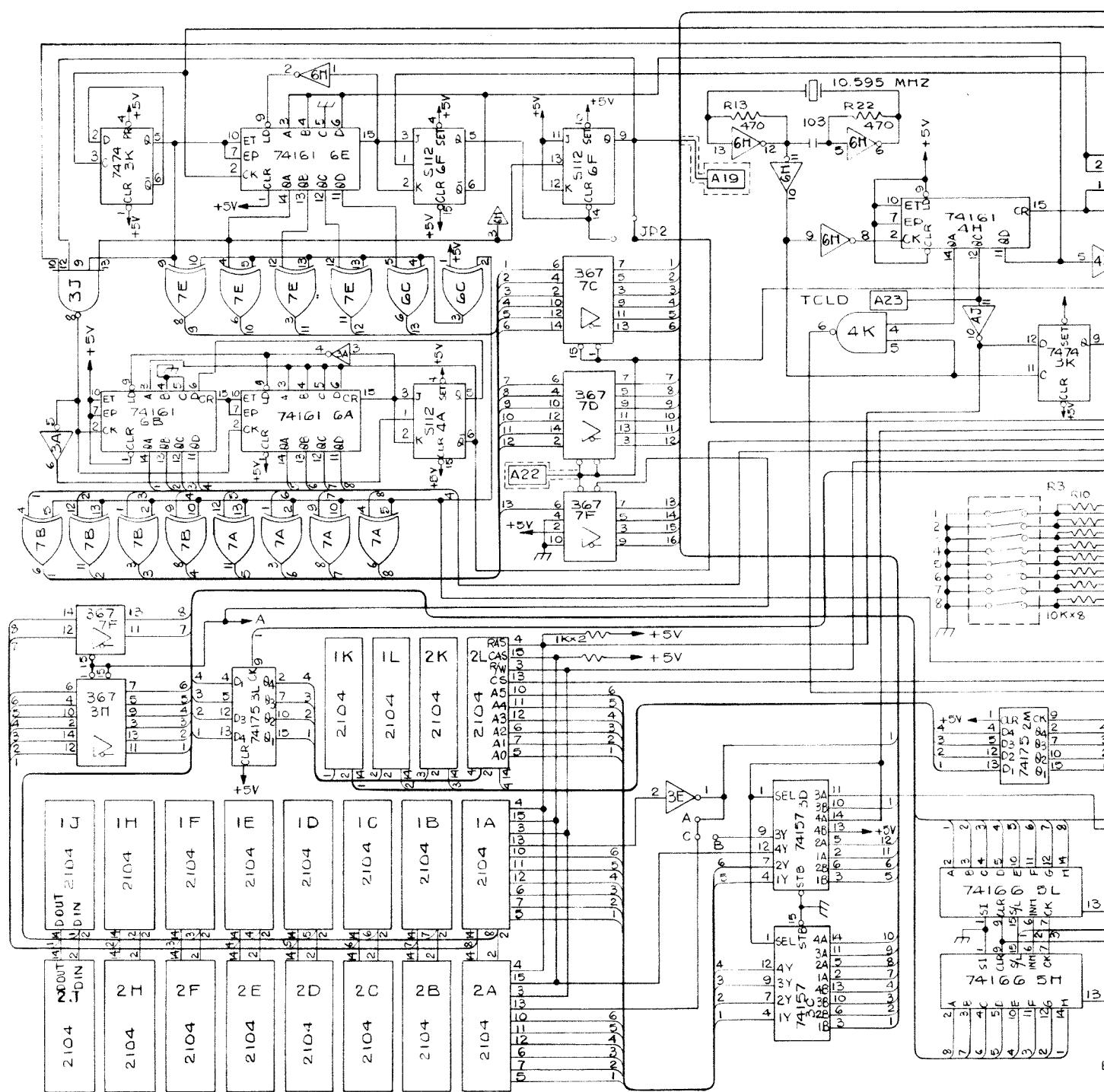
QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES		CONTRACT NO.		<p style="text-align: center;">Gremlin Industries, Inc. <i>San Diego, California 92123</i></p> <p style="text-align: center;">ASSEMBLY C P U BOARD</p>
		APPROVALS	DATE	
		DRAWN	LIEN VAN HO 4-14-80	
		CHECKED	<i>Lishman</i> 4-14-80	
MATERIAL		SIZE	CODE IDENT NO.	DRAWING NO.
FINISH		D		800-3014
NOTED		SCALE NONE		REV A
DO NOT SCALE DRAWING		SHEET 1 OF 1		

D

C

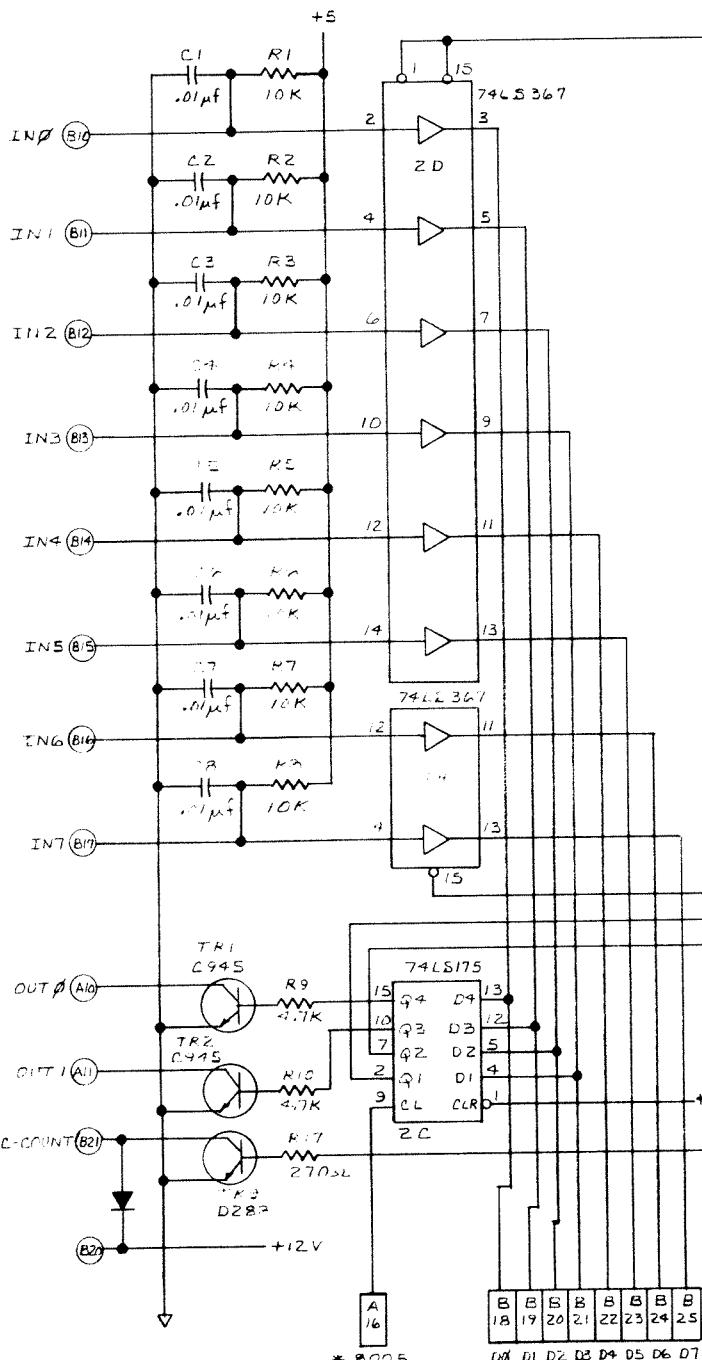
B

A

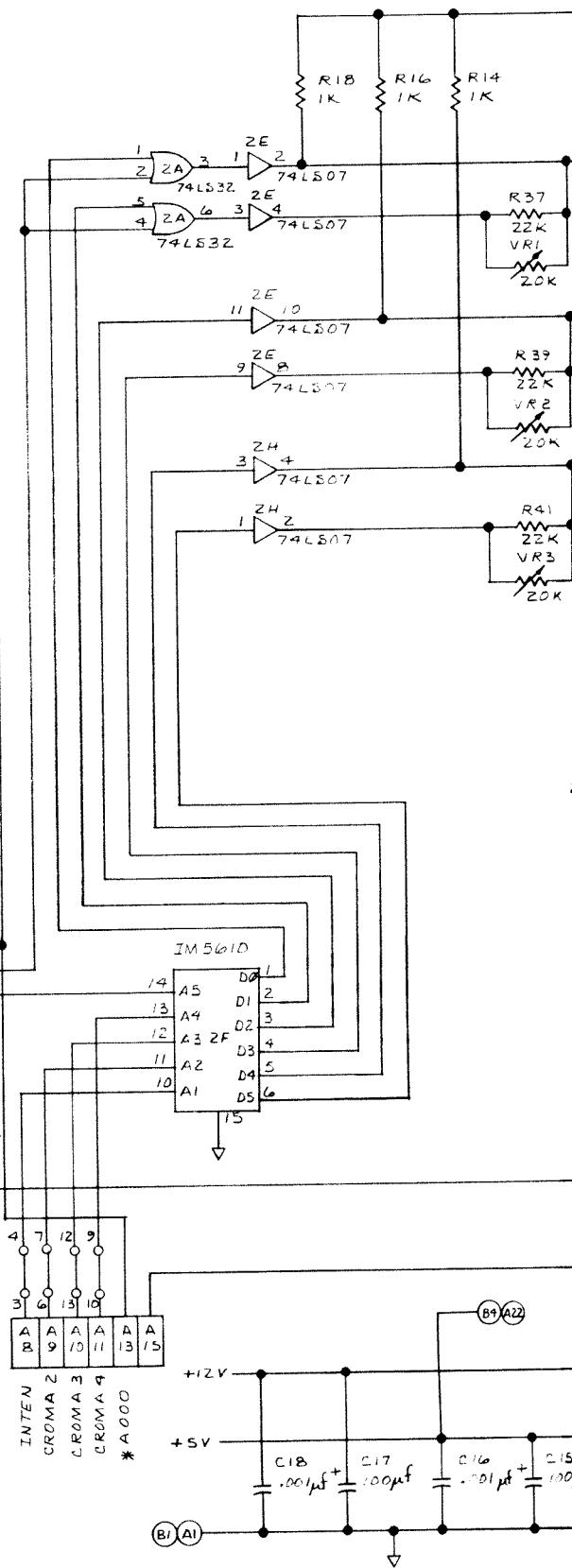
NOTES :

SECTIONS OF BOARD INDICATED BY DASHED LINES APPLICABLE
ONLY TO CERTAIN CONFIGURATIONS OF BOARD .

D

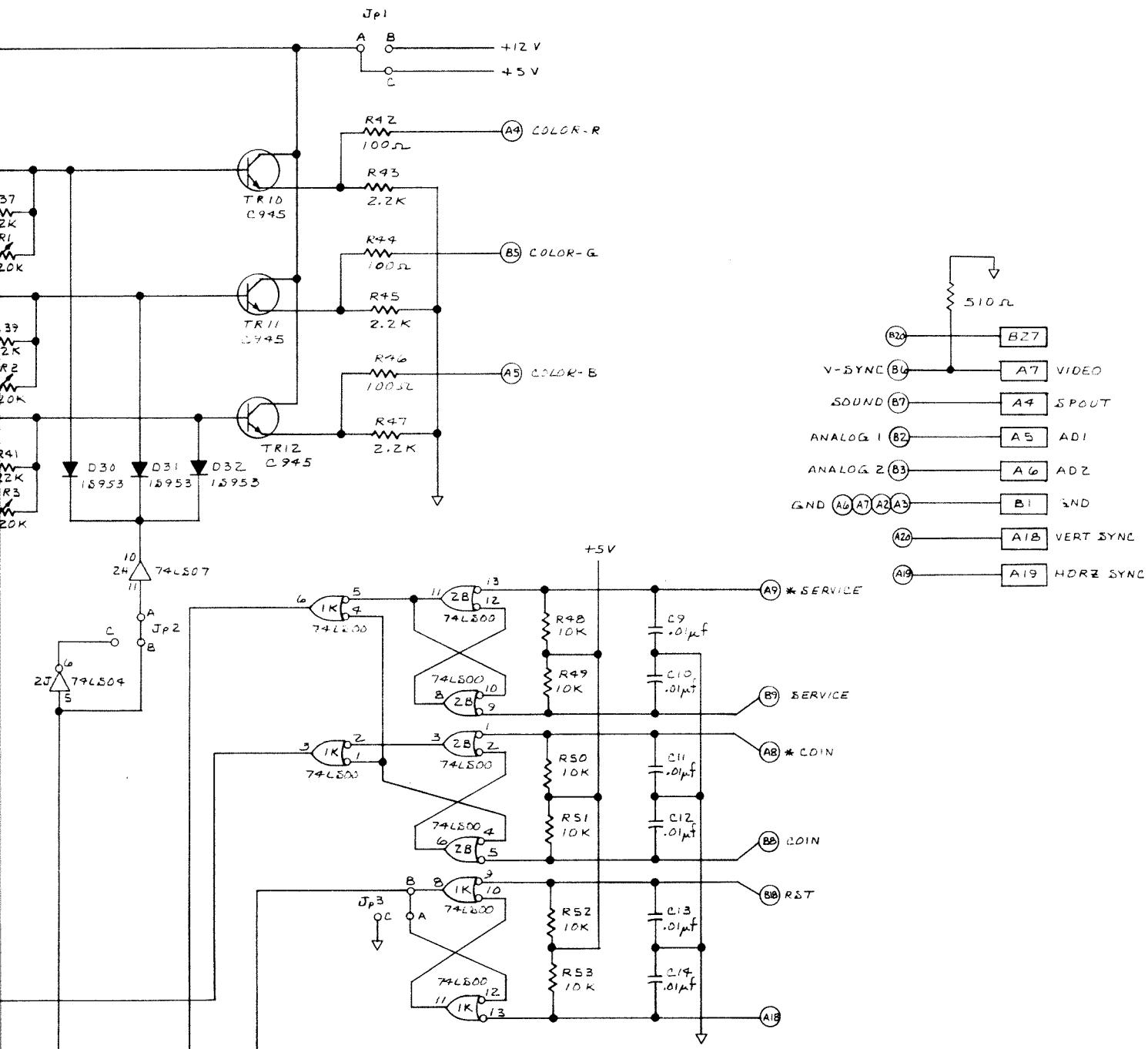


A



REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED		4-18-80	T.J.



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES $\pm .XX$ $\pm .XXX$ $\pm .XX^\circ$				CONTRACT NO.
				APPROVALS DATE
MATERIAL			DRAWN <i>Wyzewa</i> 3-21-80	CHECKED <i>Lishnak</i> 4-14-80
FINISH				
APPLICATION	DO NOT SCALE DRAWING			
SCALE NONE				REV A

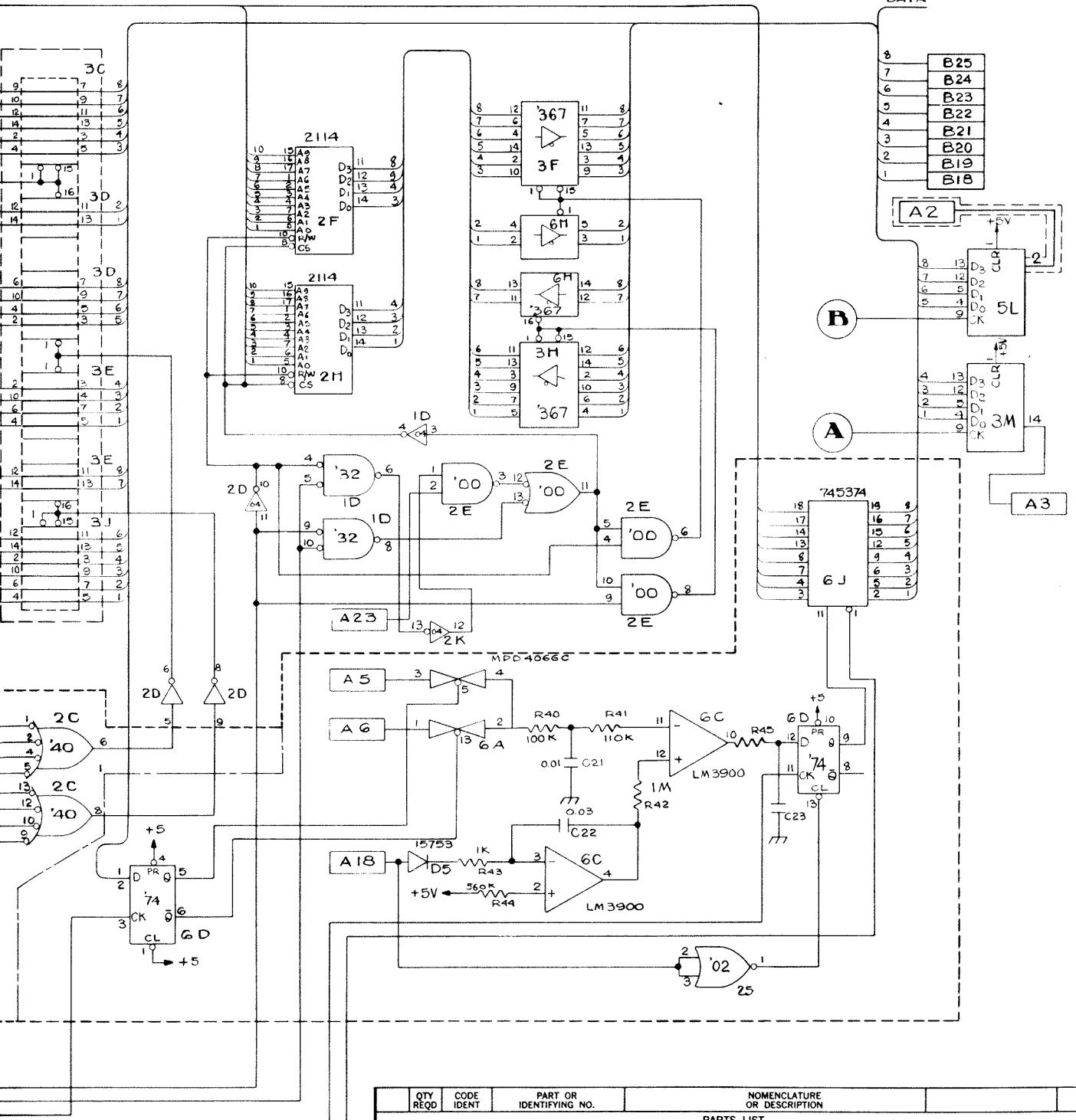
Gremlin Industries, Inc.
San Diego, California 92123

SCHEMATIC —
I/O BOARD

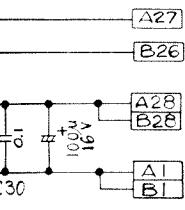
REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	L.H. 4-14-80	T.L.

DATA



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES \pm XX \pm \pm \pm XXX \pm		CONTRACT NO.	Gremlin Industries, Inc. San Diego, California 92123	
MATERIAL		APPROVALS	DATE	
FINISH		DRAWN	LIEN VAN MO	4-2-80
NOTED		CHECKED	Ziskoush	4-14-80
APPLICATION	DO NOT SCALE DRAWING	SIZE	CODE IDENT NO.	DRAWING NO.
		D		800-3016
		SCALE NONE		SHEET 1 OF 2

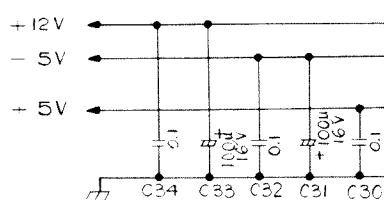
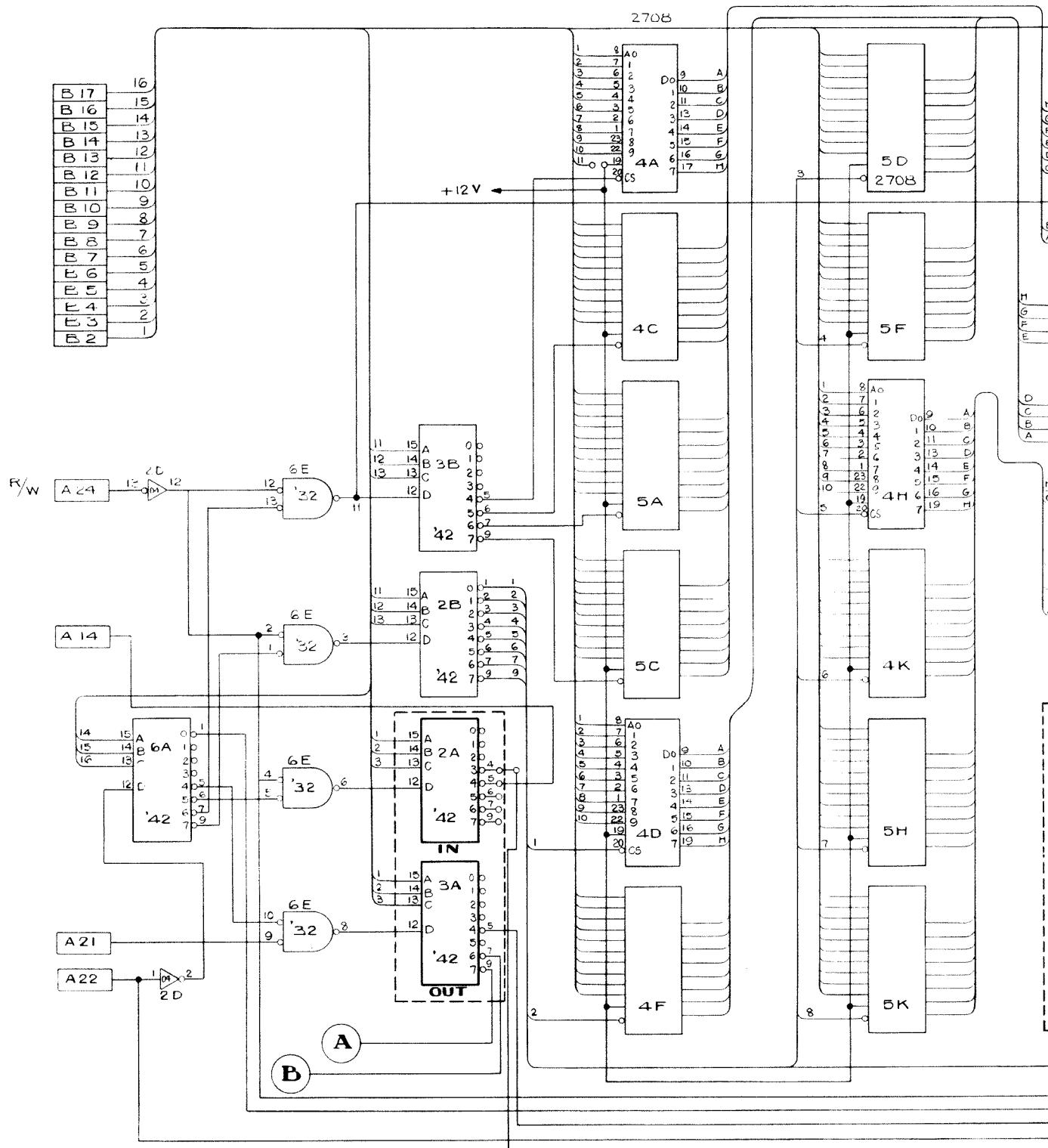


D

C

B

A

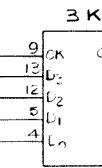


D

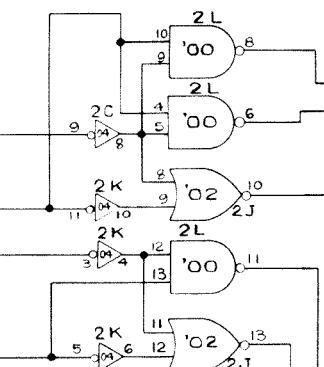
DATA

A17

B



→ +5V

**C**

B27

→ +12VR

C26 + 100M 16V D5 D6 D7 C27 + 10V

C28 - 0.1

B

A27

B26

→ +12V

→ -5V

A28

E28

+ 100M 16V C24 C25 C26 C27 C28 + 5V

- 100M 16V C29 C30 C31 C32 C33 - 5V

+ 100M 16V C34 C35 C36 C37 C38 + 5V

A1

B1

FLAT CABLE

3M

SOCKET

4 13 12 11 10 9 8 7 6 5 4 3 2 1

19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

A

NOTES :

SECTIONS OF BOARD INDICATED BY DASHED LINES
APPLICABLE ONLY TO CERTAIN CONFIGURATIONS
OF BOARDS.

A

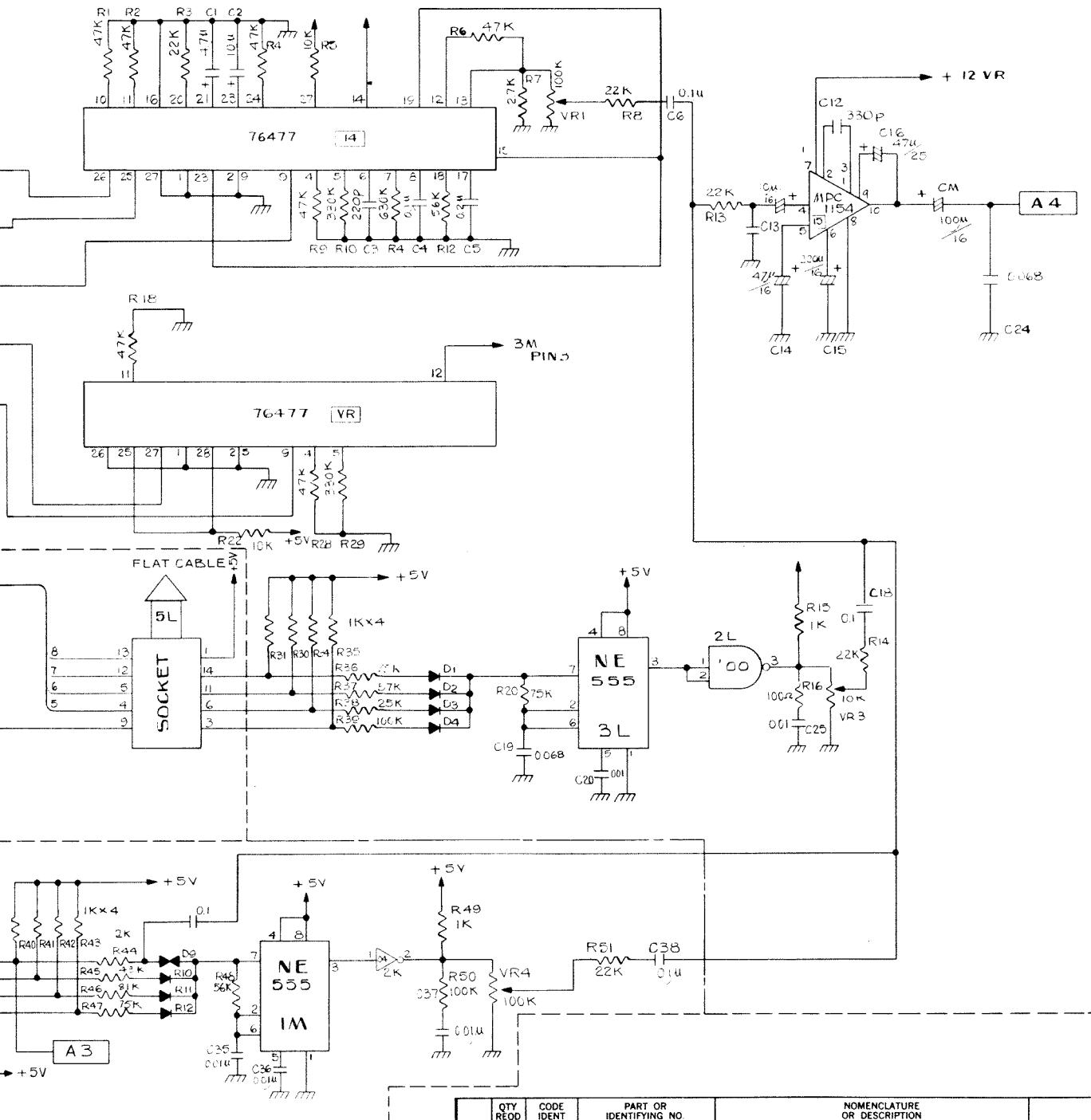
4

3

2

1

REVISIONS		DESCRIPTION	DATE	APPROVED
ZONE	LTR			
A		RELEASED	LM	4-14-80 TK



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION			
PARTS LIST						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES \pm $\pm .XX$ $\pm .XXX$		CONTRACT NO.				
MATERIAL		APPROVALS DATE				
FINISH		DRAWN LIEN VAN MO 4-8-80				
NOTED		CHECKED Laskawak 4-14-80				
APPLICATION		DO NOT SCALE DRAWING				
A/F		SCALE NONE				
NEXT ASSY		REV A				
ASSEMBLY ROM BOARD						
D		SIZE CODE IDENT NO. DRAWING NO.				
800-3016		REV A				
SHEET 2 OF 2						

4

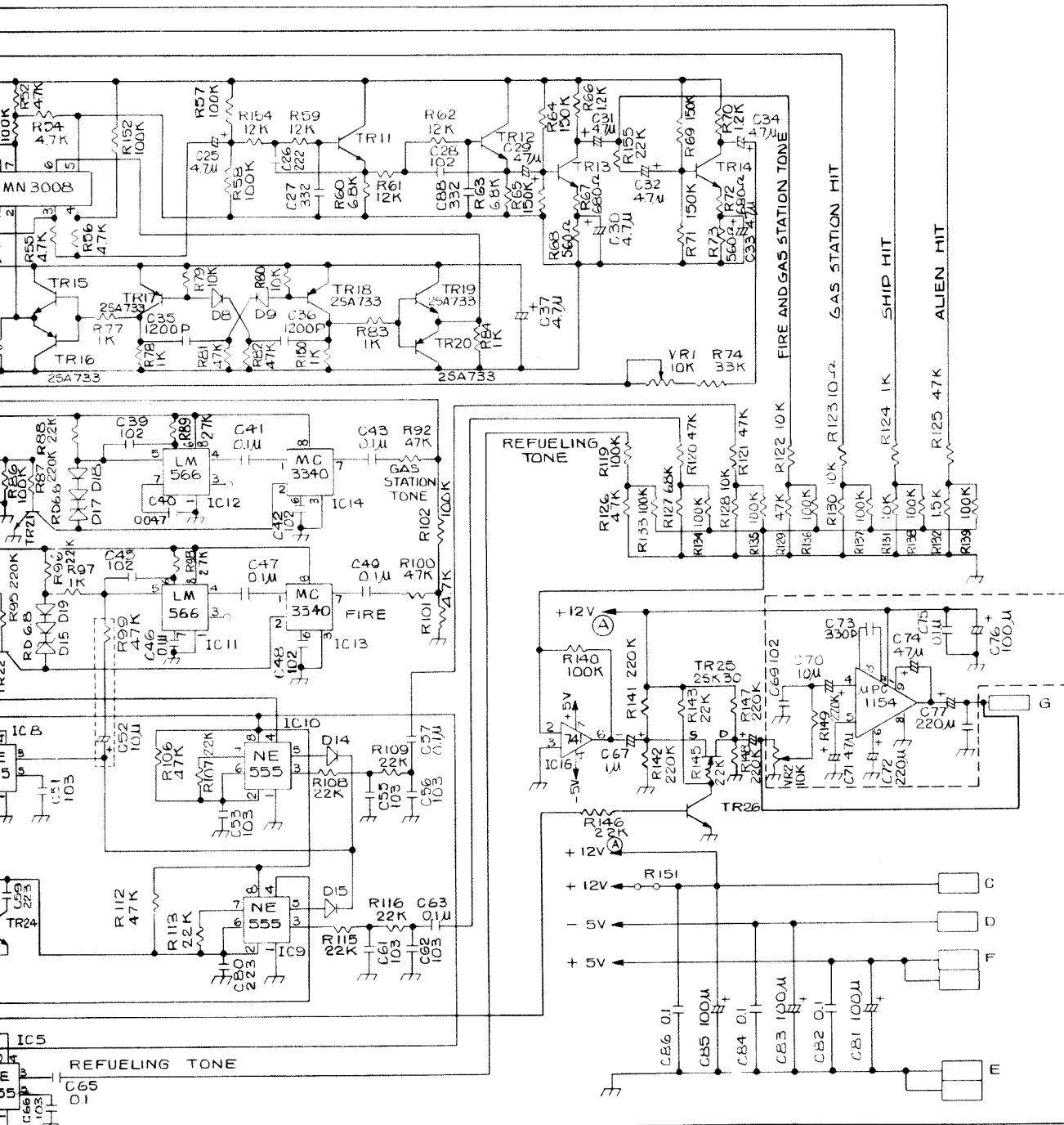
3

2

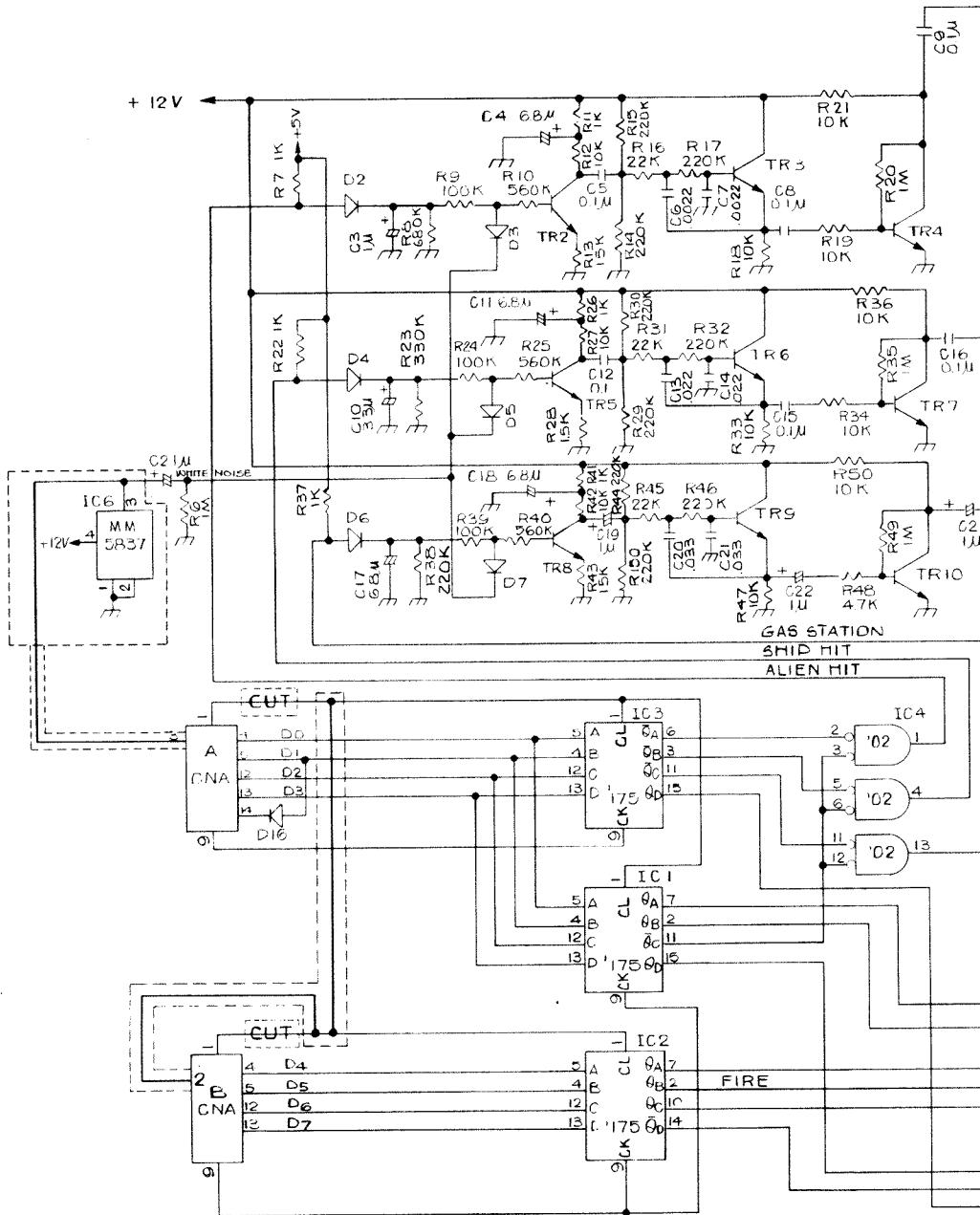
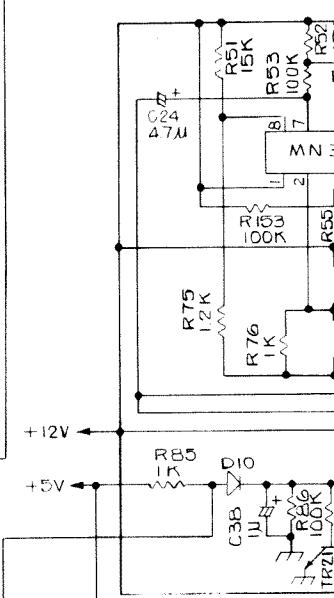
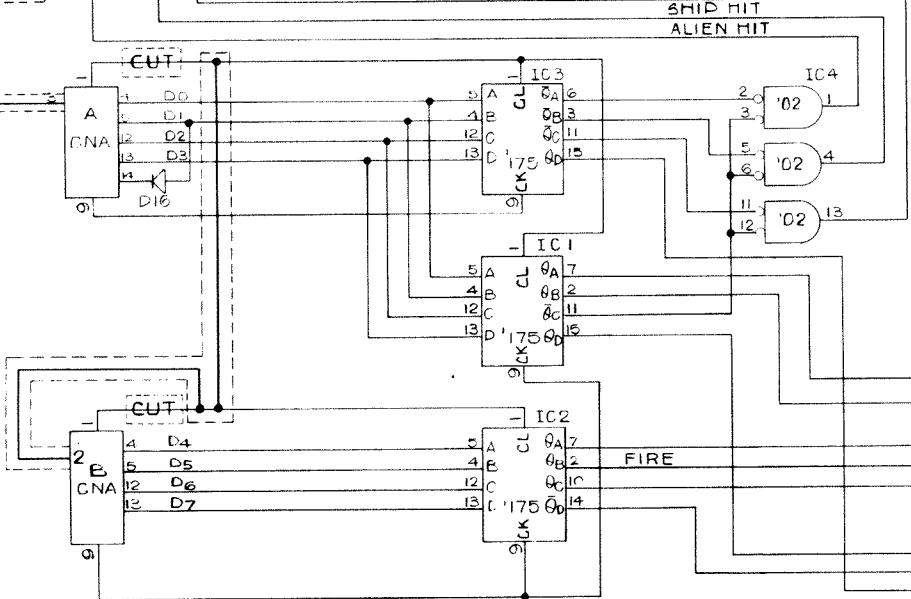
1

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	4-14-80	T.L.



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES \pm \pm \pm $\pm .XX$ $\pm .XXX$ $\pm .$	CONTRACT NO.	Gremlin Industries, Inc. San Diego, California 92123		
MATERIAL	APPROVALS	DATE		
	DRAWN	LIEN VAN HO	3.24.80	
	CHECKED	J. L. L. L.	4-14-80	
FINISH				
NOTED				
A/F				
NEXT ASSY	USED ON			
APPLICATION	DO NOT SCALE DRAWING			
SCHEMATIC AUDIO BOARD				
SIZE	CODE IDENT NO.	DRAWING NO.		
D		800-3017	REV A	
SCALE NONE				SHEET 1 OF 1

D**C****B****A****NOTES:**

SECTIONS OF BOARD INDICATED BY
DASHED LINES APPLICABLE ONLY
TO CERTAIN CONFIGURATIONS OF
BOARDS.