

# ASTRO FIGHTER

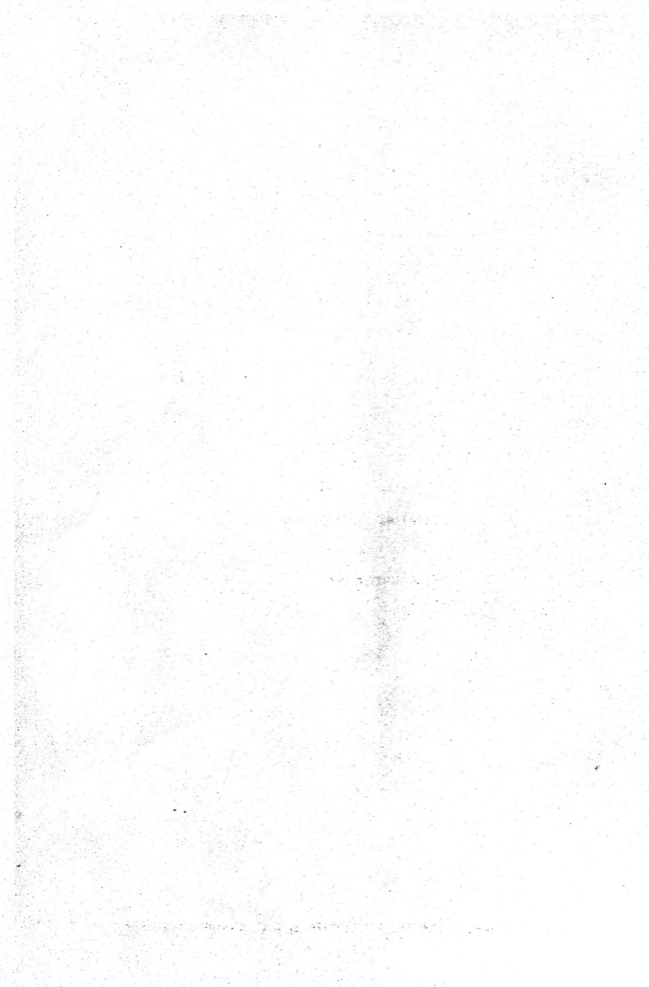
Gremlin<sup>®</sup>/SEGA<sup>®</sup>

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 circuit 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.

### SERVICE TECHNICIAN NOTE:

The system reset circuitry described above requires that the coin counter is attached to the system. If there is a coin counter problem and no replacement is available, the game will function properly if a 10K Ohm resistor is connected across the coin counter input pins to the video logic board.

## 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:

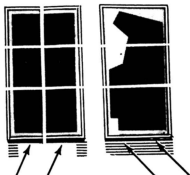
GREMLIN INDUSTRIES, INC.  
8401 Aero Drive  
San Diego, California 92123  
(714) 277-8700

# REPACKAGING INSTRUCTIONS...

**Arcade**  
25 1/4" W x 87" H x 28" D  
64.77cm W x 175.18cm H x 71.12cm D  
280 lbs./122 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 Reocrating Instructions, below.



## 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 Reocrating 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.



## 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 Reocrating Instructions, below.

**Cocktail**  
22" W x 34" L x 24 1/4" H  
55.88cm W x 85.96cm L x 62.23cm H  
80 lb./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.

714-277-8700

OPTIONS SELECT AND SOUND CONTROL ADJUSTMENTSDIP 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

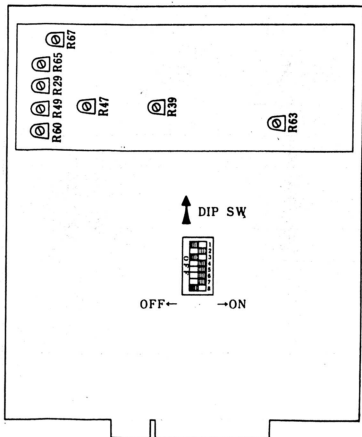
4	OFF	ON	OFF	ON
5	OFF	OFF	ON	ON
		1COIN·1PLAY	2COIN·1PLAY	1COIN·2PLAY

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

- 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



DRAWN MAHONEY		ENGR			
CHECK <i>H. F.</i>		APPR			
TR	DATE	REVISION DESCRIPTION	DRAFT	CHECK	APPR
A	2-6-80	RELEASED	2-8-80 J.M.	<i>SP</i>	<i>SP</i>











COMPASSION INDUSTRIES, INC.  
SAN DIEGO, CALIFORNIA 92123

PARTS  
LIST

ASSEMBLY CONTROL PNL  
ASTRO FIGHTER

800-3009

SH 1  
OF 3

A

REV

SHEET 3 15 "D" SIZE

DRAWN MAHONEY

ENGR

CHECK *S.H. P. Fay*

APPR

LTR DATE

A 2-8-80

REVISION DESCRIPTION

RELEASED

DRAFT

J.M.

CHECK

*S.H. P.*

APPR

*S.H. P.*

2-8-80



Gremlin Industries, Inc.  
San Diego, California 92123

PARTS  
LIST

TITLE ASSY-GAME  
ASTRO FIGHTER  
COCKTAIL (ENGLISH)

DWG NO 700-0007

SH ' OF 5

A REV

SHT 4, 5 ARE "D" SIZE

DRAWN Wjg... 2-12-80 ENGR

CHECK *[Signature]* ... 2-11-80 APPR

TR	DATE	REVISION DESCRIPTION	DRAFT	CHECK	APPR
A	2-17-80	RELEASED	WJB	<i>[Signature]</i>	<i>[Signature]</i>



Gremlin Industries, Inc. San Diego, California 92133		PARTS LIST		TITLE		DWG NO		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		THERMISTER							
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							
19	834-5000	1		ASSY GAME ELECTRONICS	(SEGA)						
20	600-0001	1		CORD, LINE, 3 COND							
21		8		SCREW PHL. PN. HD. 6x1/2 SH. MTL.							
22		6		SCREW PHL. PN. HD. 6x1/2 SH. MTL.							

**Gremlin Industries, Inc.**  
San Diego, California 92123

**PARTS LIST**



**TITLE TOP ASSY  
GAME, ASTRO FIGHTER  
SLIMLINE**

**700-0008  
DWG NO**

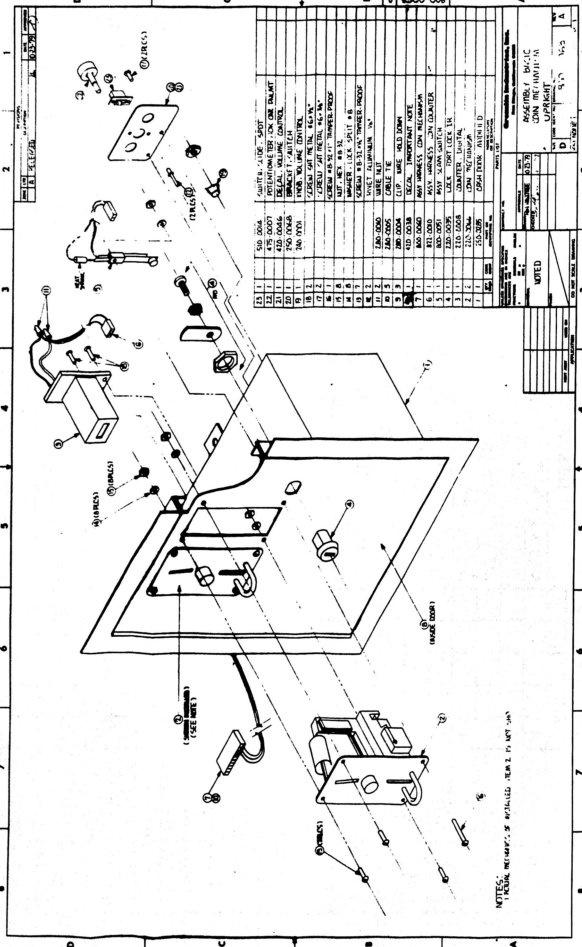
**SH 2  
OF 6**

**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. SHT. MTL. SCREW	
21		6	#8 x 1" FLAT HD. WOOD SCRFW	
22		7	#8 x 1" PAN HD. SHT. MTL. SCREW	
23		3	#10 x 1 3/4" FLT. HD. WOOD SCREW	
24		2	#10 x 1/2" PAN HD. SHT. MTL. SCREW	
25		4	#8 FLAT WASHER	

<b>Gremlin Industries, Inc.</b> <small>San Diego, California 92133</small>		<b>PARTS LIST</b>		<b>TITLE TOP ASSY.</b> GAME, ASTRO FIGHTER SLIMLINE		700-0008 DWG NO		SH 1 OF 6		A REV	
SHTS. 4-6 ARE "D" SIZE				DRAWN MAHONEY		ENGR					
				CHECK <i>John Mahoney</i>		APPR					
<b>LTR</b>		<b>DATE</b>		<b>REVISION DESCRIPTION</b>							
A		3-3-80		RELEASED		DRAFT J.M.		CHECK 		APPR 	





23	1	510 0004	SWITCH - 1/2" X 1/2" SPST
22	1	475 0007	POTENTIOMETER CON ONE DIAL KIT
21	1	410 0046	DECAL, VOLUME CONTROL
20	1	750 0048	BRACKET, SWITCH
19	1	740 0028	1/8" X 1/2" X 1/8" W/SLIP RING
18	2		2-CORED SHIELDING CABLE
17	2		2-CORED SHIELDING CABLE
16	2		2-CORED SHIELDING CABLE
15	2		2-CORED SHIELDING CABLE
14	2		2-CORED SHIELDING CABLE
13	2		2-CORED SHIELDING CABLE
12	2		2-CORED SHIELDING CABLE
11	2		2-CORED SHIELDING CABLE
10	3		2-CORED SHIELDING CABLE
9	3		2-CORED SHIELDING CABLE
8	2		2-CORED SHIELDING CABLE
7	2		2-CORED SHIELDING CABLE
6	2		2-CORED SHIELDING CABLE
5	2		2-CORED SHIELDING CABLE
4	2		2-CORED SHIELDING CABLE
3	2		2-CORED SHIELDING CABLE
2	2		2-CORED SHIELDING CABLE
1	2		2-CORED SHIELDING CABLE

NOTES:  
 1. USE RECOMMENDED MATERIALS.  
 2. ASSEMBLY MUST BE IN NET 200.

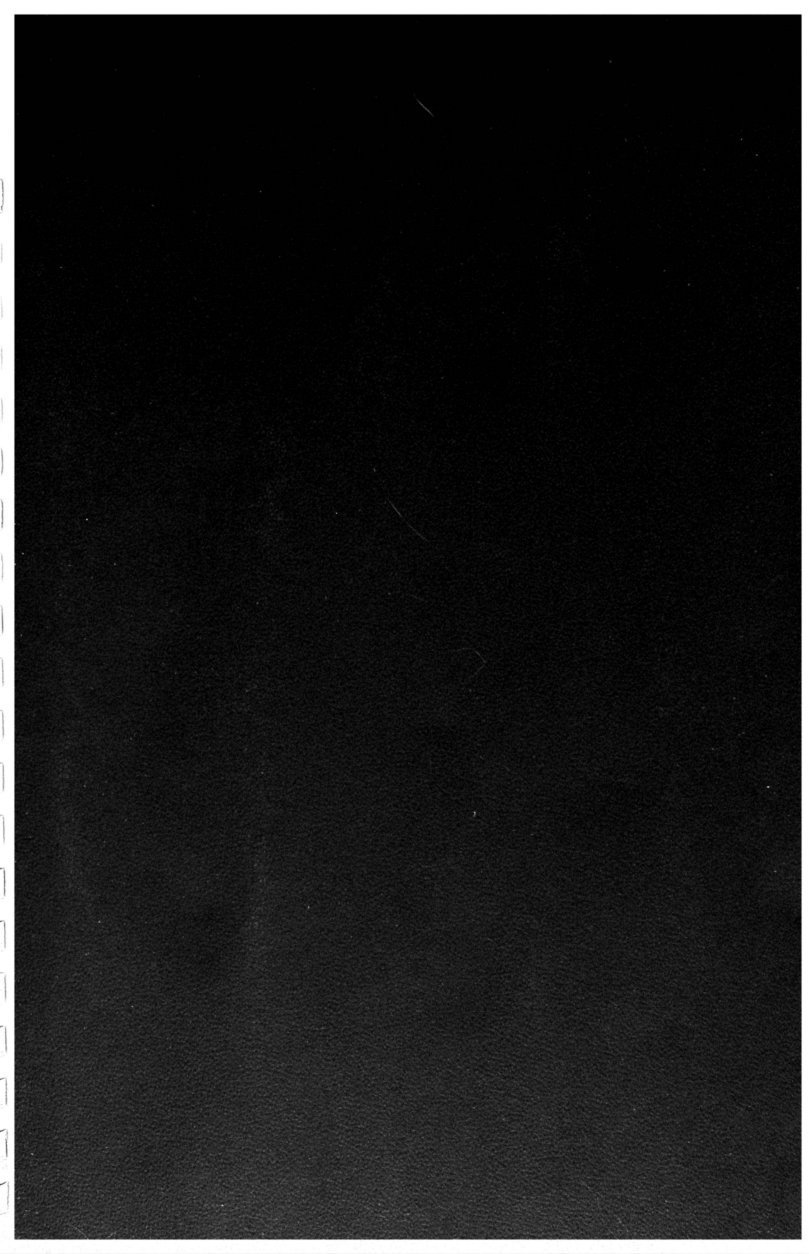
ASSEMBLY BENCH  
 CONN REC / HWY 11A  
 UPRIGHT  
 11/15/58

NOTED

DATE: 11/15/58

BY: [Signature]

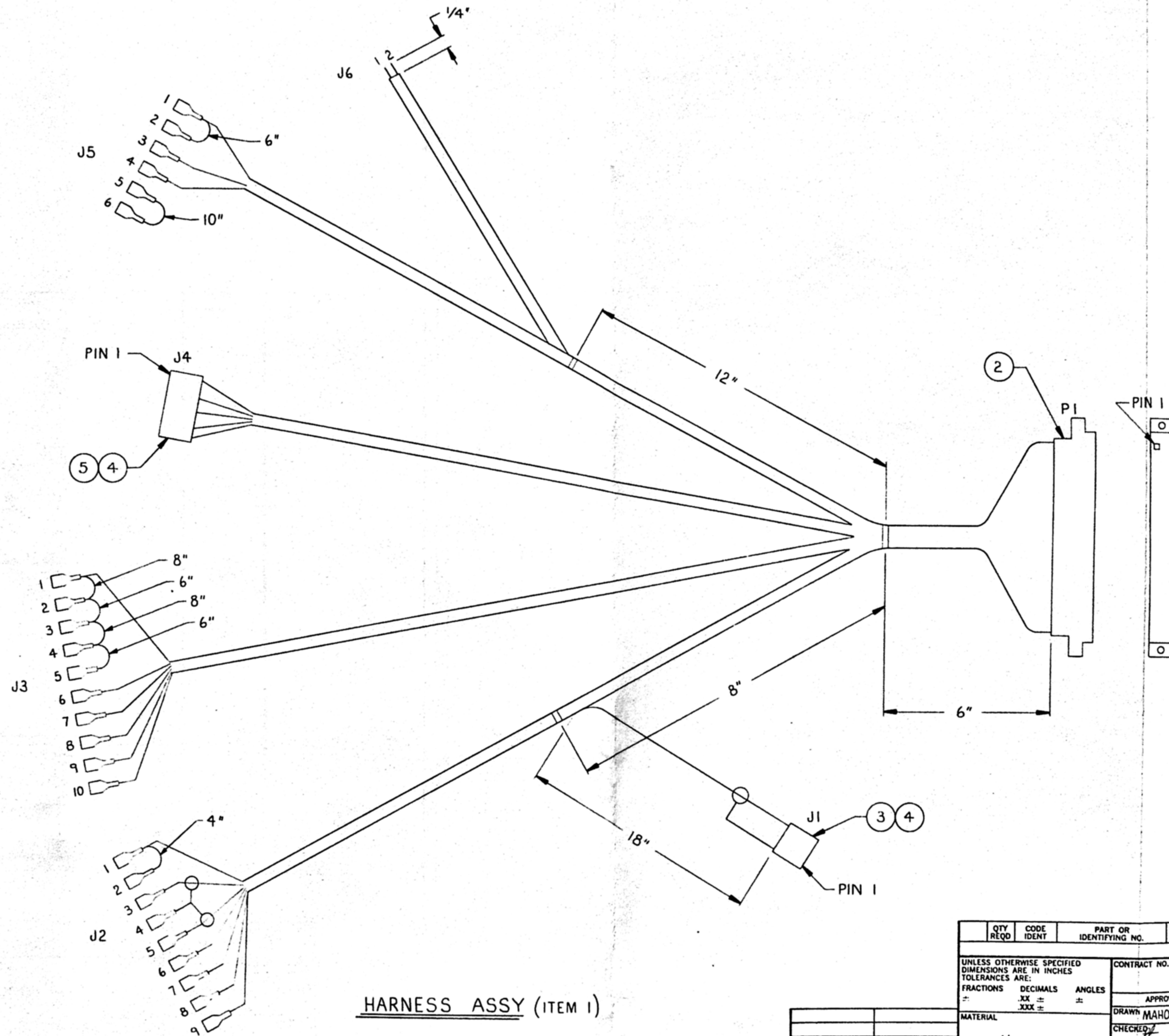
FOR THE BENCH ENGINEER





**NOTES:**

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



HARNESS ASSY (ITEM 1)

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	2-8-80	[Signature]

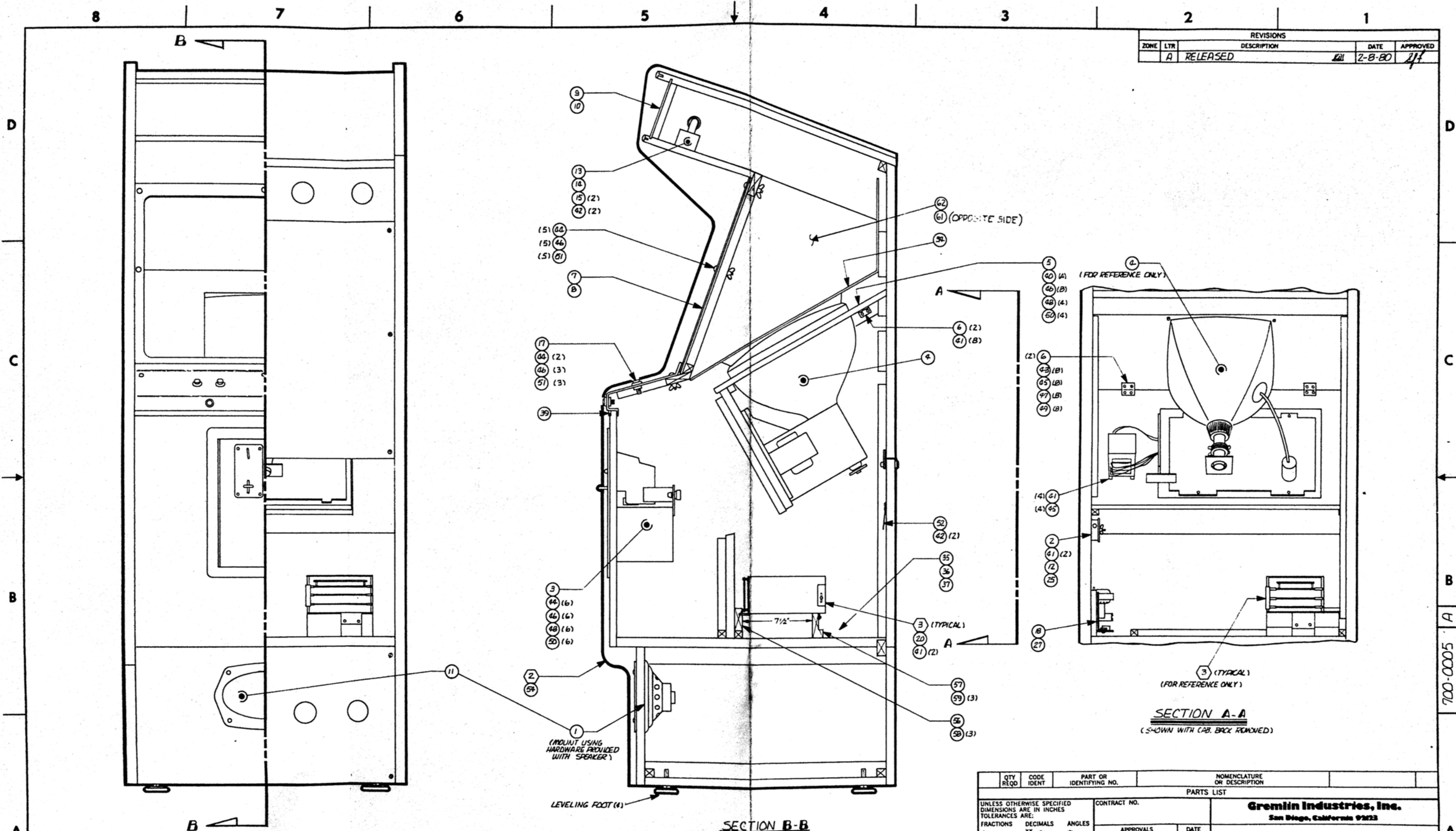
NO.	FROM	TO	COLOR	INCH
47	J5-5	J5-6	JUMPER	10
46	J2-4	J1-1	SHLD. CA. GND	42
45	J2-5	J1-4	SHLD. CA. WHT	42
44	PI-22			
43	PI-21			
42	PI-20			
41	PI-19			
40	PI-18	J2-9	WHT/VIO	60
39	PI-17			
38	PI-16			
37	PI-15			
36	PI-14			
35	PI-13			
34	PI-12			
33	PI-11			
32	PI-10			
31	PI-9	J2-5	WHT/BLU	60
30	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			
1	PI-A	J3-1,2,3,4,5	BLK	62

WIRE LIST

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.	
FRACTIONS	DECIMALS	ANGLES	
±	.XX ±	±	
	.XXX ±		
MATERIAL		APPROVALS	DATE
NOTED		DRAWN MAHONEY	2-6-80
FINISH		CHECKED [Signature]	2-8-80
NEXT ASSY USED ON		GREMLIN INDUSTRIES, INC. San Diego, California 92121	
APPLICATION		ASSY HARNESS MASTER A F	
DO NOT SCALE DRAWING		SIZE	CODE IDENT NO. DRAWING NO.
		D	800-3010
		SCALE NONE	REV. A
		SHEET 3 OF 3	

800-3010

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	2-8-80	[Signature]



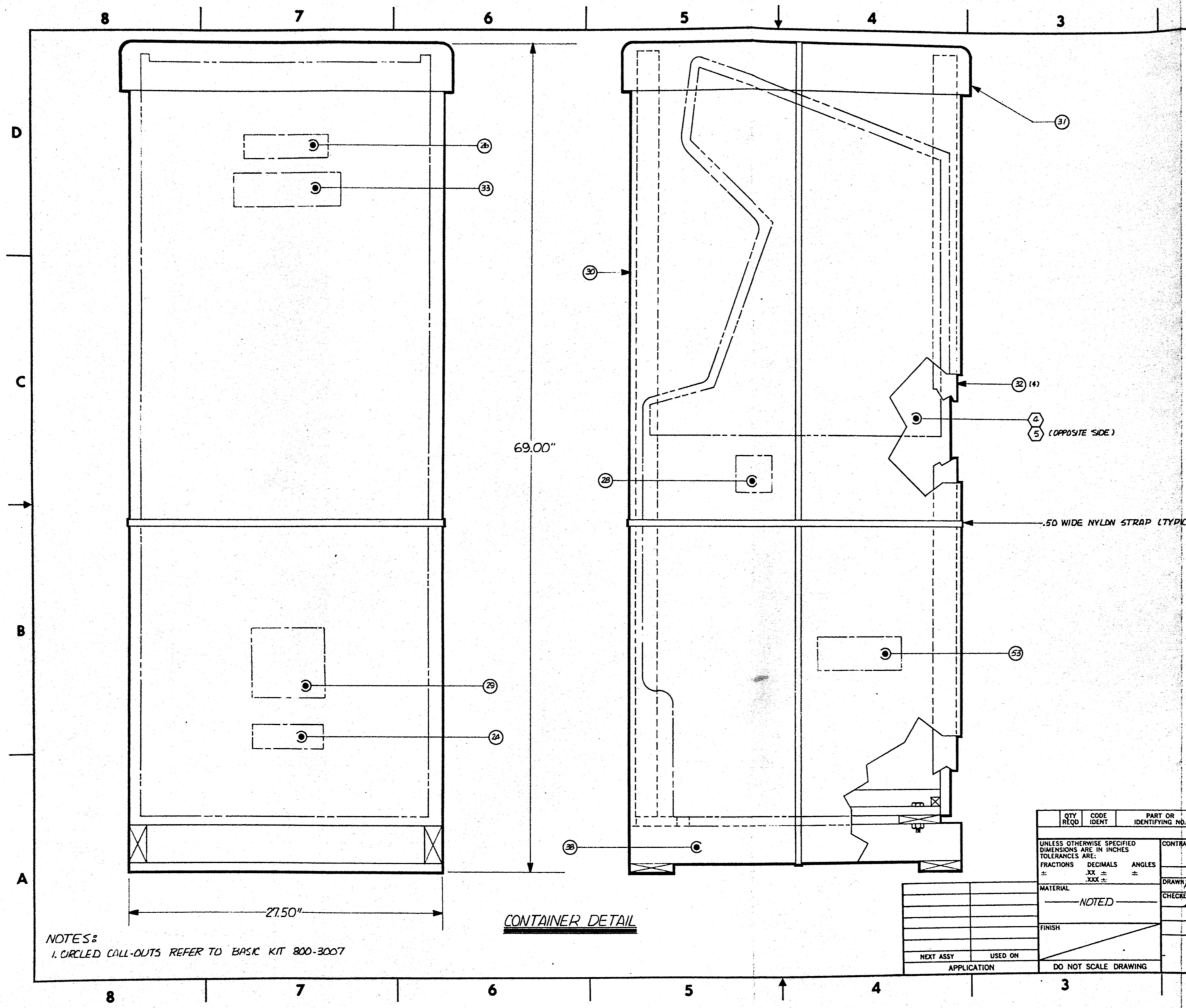
NOTES:  
1. CIRCLED CALL-OUTS REFER TO BASIC KIT B00-3007.

SECTION B-B

SECTION A-A  
(SHOWN WITH CAB. BACK REMOVED)

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		CONTRACT NO.		
FRACTIONS	DECIMALS	ANGLES	APPROVALS	DATE
±	.XX ±	±	[Signature]	2-7-80
	.XXX ±		CHECKED	2-8-80
MATERIAL		FINISH		
NOTED				
NEXT ASSY		USED ON		
APPLICATION		DO NOT SCALE DRAWING		
Gremlin Industries, Inc. San Diego, California 92123			TOP ASSEMBLY ASTROFIGHTER	
SIZE	CODE IDENT NO.	DRAWING NO.	REV.	
D		700-0005	A	
SCALE	NONE		SHEET 3 of 5	

700-0005 A



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	2-8-80	[Signature]

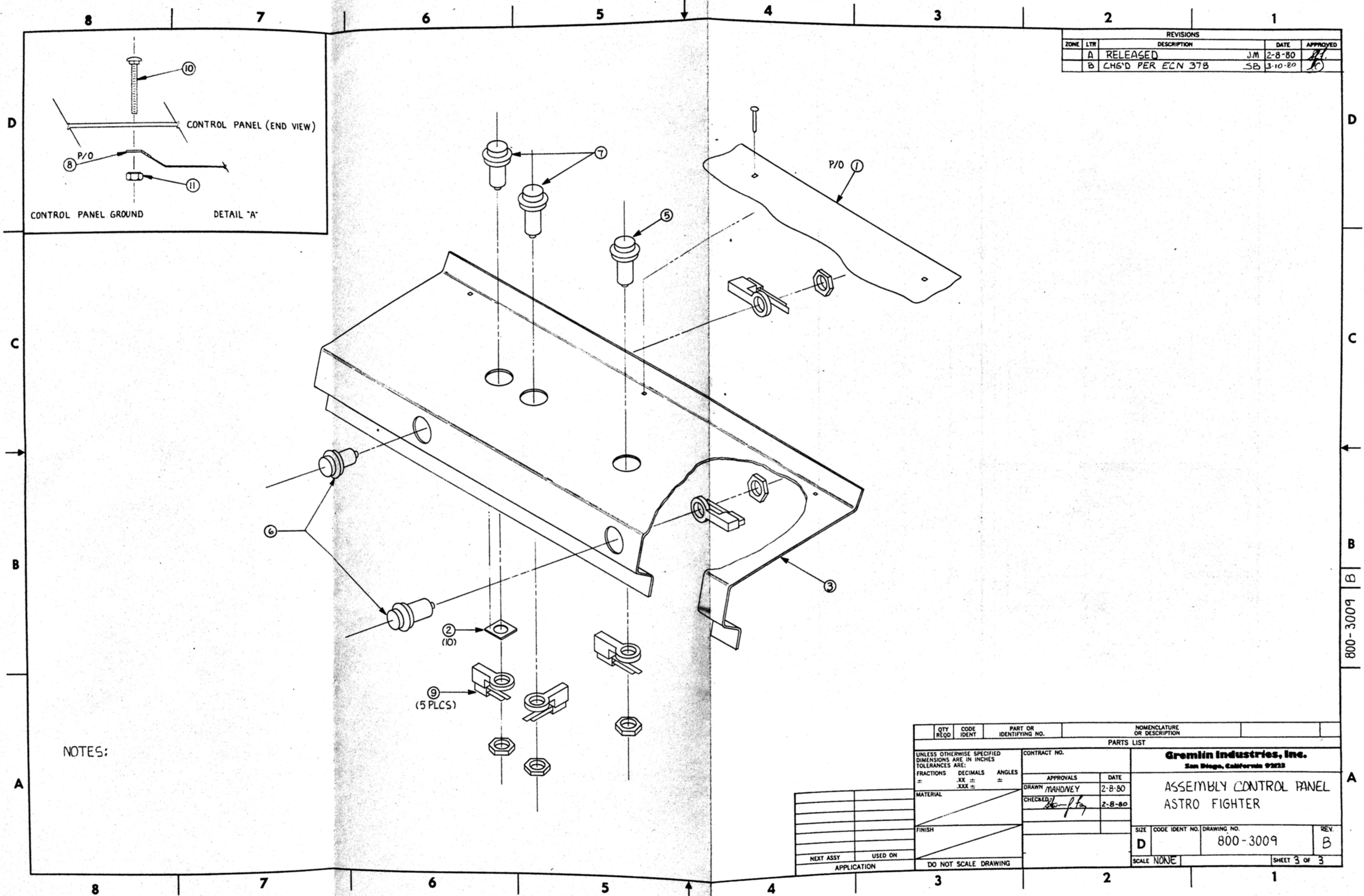
NOTES:  
1. CIRCLED CALL-OUTS REFER TO BASIC KIT 800-3007

CONTAINER DETAIL

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

700-0005 A

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	JM 2-8-80	<i>[Signature]</i>
B		CHG'D PER ECN 378	SB 3-10-80	<i>[Signature]</i>



NOTES:

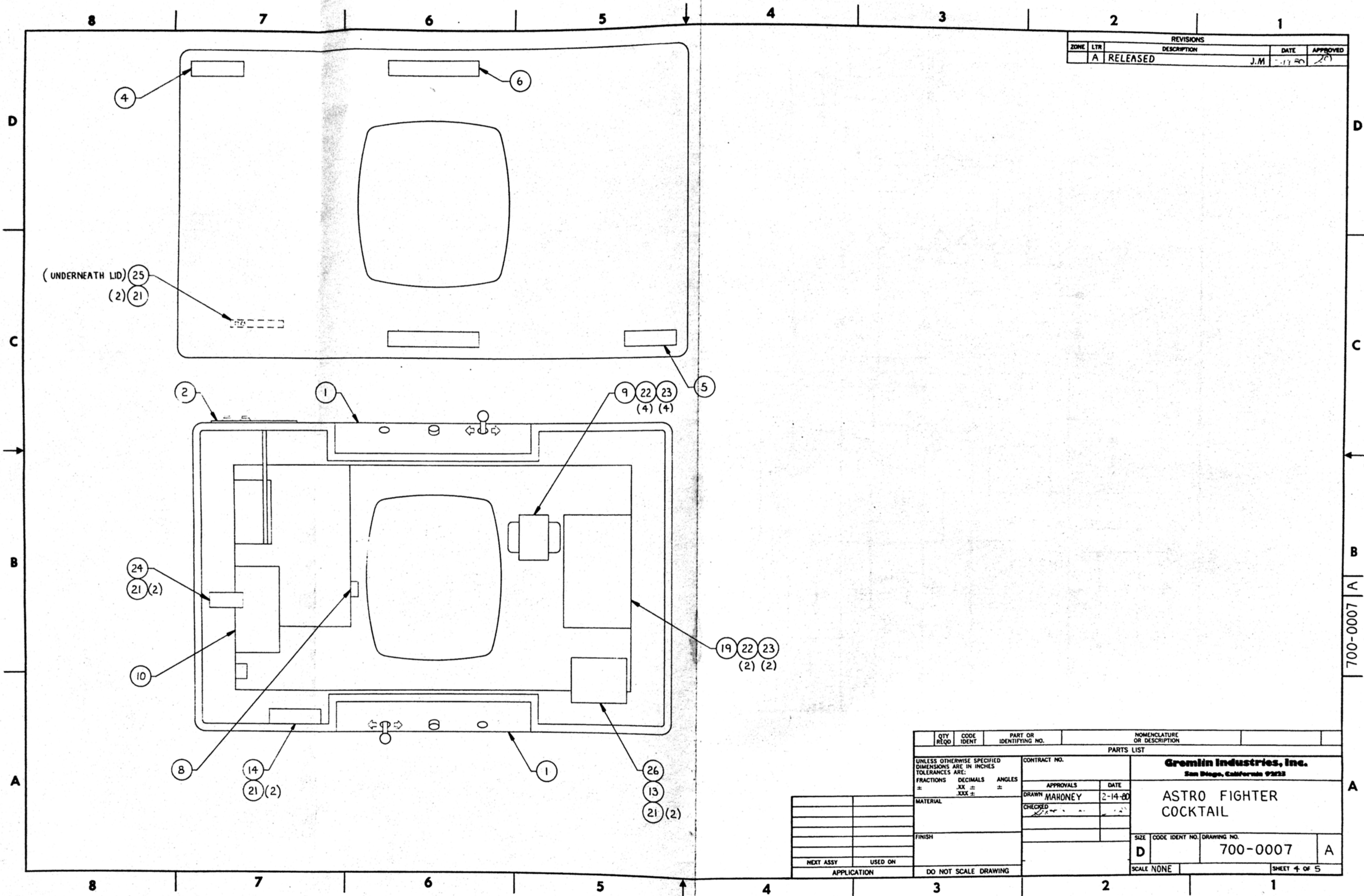
QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.	
FRACTIONS	DECIMALS	ANGLES	<b>Gremlin Industries, Inc.</b> San Diego, California 92123
±	.XX ±	±	
MATERIAL	±	±	APPROVALS DRAWN MAHONEY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

800-3009







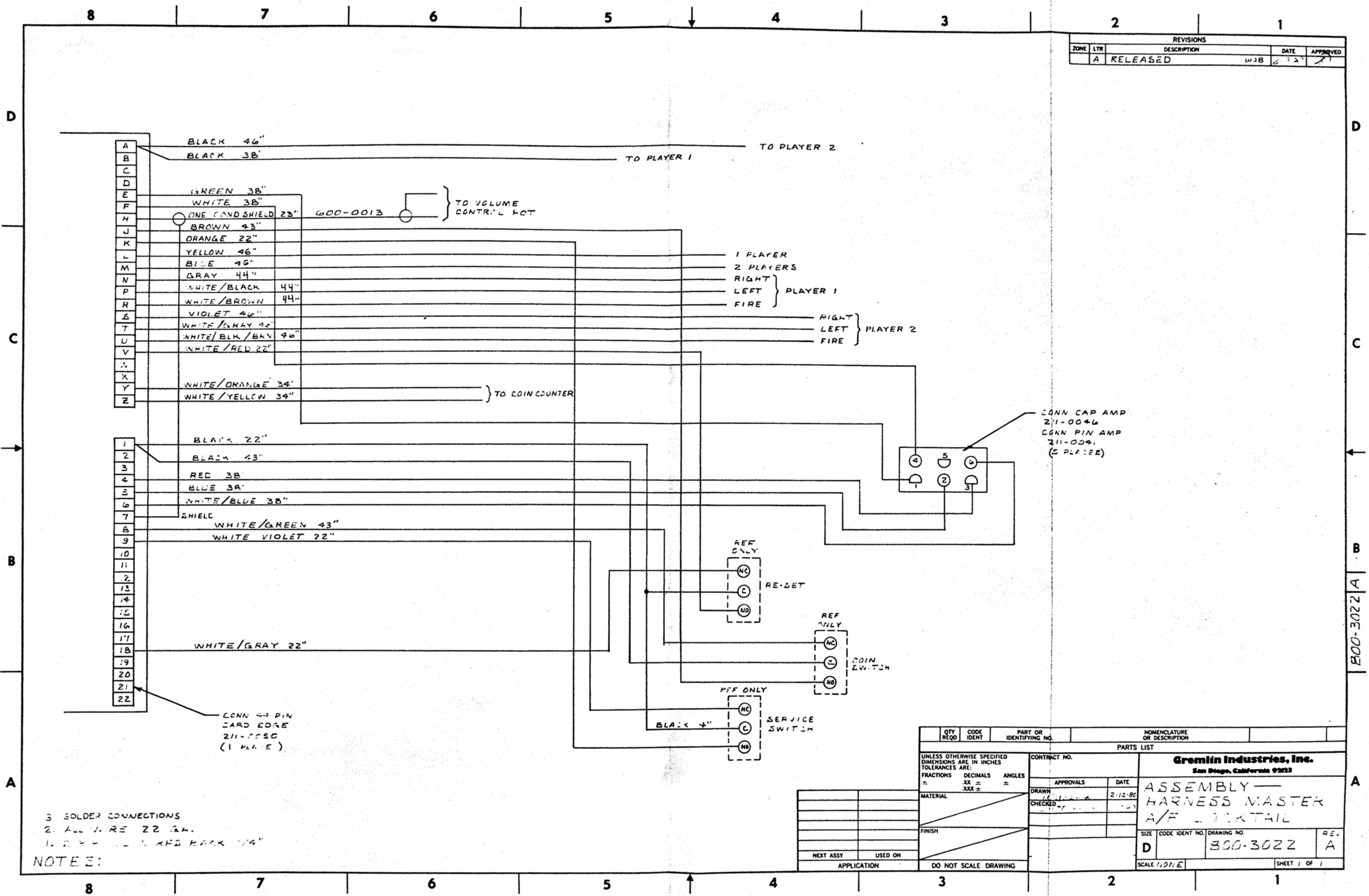


REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	J.M. 11-17-80	(Signature)

700-0007 | A

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.	
FRACTIONS	DECIMALS	ANGLES	<b>Gremlin Industries, Inc.</b> San Diego, California 92123
±	.XX ±	±	APPROVALS
	.XXX ±		DATE
MATERIAL			DRAWN MAHONEY 2-14-80
FINISH			CHECKED
NEXT ASSY	USED ON	DO NOT SCALE DRAWING	SIZE CODE IDENT NO. DRAWING NO.
APPLICATION			D 700-0007 A
			SCALE NONE SHEET 4 OF 5

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



CONN CAP AMP  
211-0046  
CONN PIN AMP  
211-0049  
(5 PLACES)

CONN 44 PIN  
CARD EDGE  
211-0050  
(1 PLACE)

NOTES:  
3. SOLDER CONNECTIONS  
2. ALL WIRE 22 GA.  
1. WIRE BACK 1/4"

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS: ± .005 DECIMALS: ± .001 ANGLES: ± .1°		CONTRACT NO.	
MATERIAL		APPROVALS	DATE
FINISH		DRAWN	2-12-80
NEXT ASSY		CHECKED	
USED ON		DRAWING NO. 800-3022	
APPLICATION		SCALE 1/16" = 1"	SHEET 1 OF 1

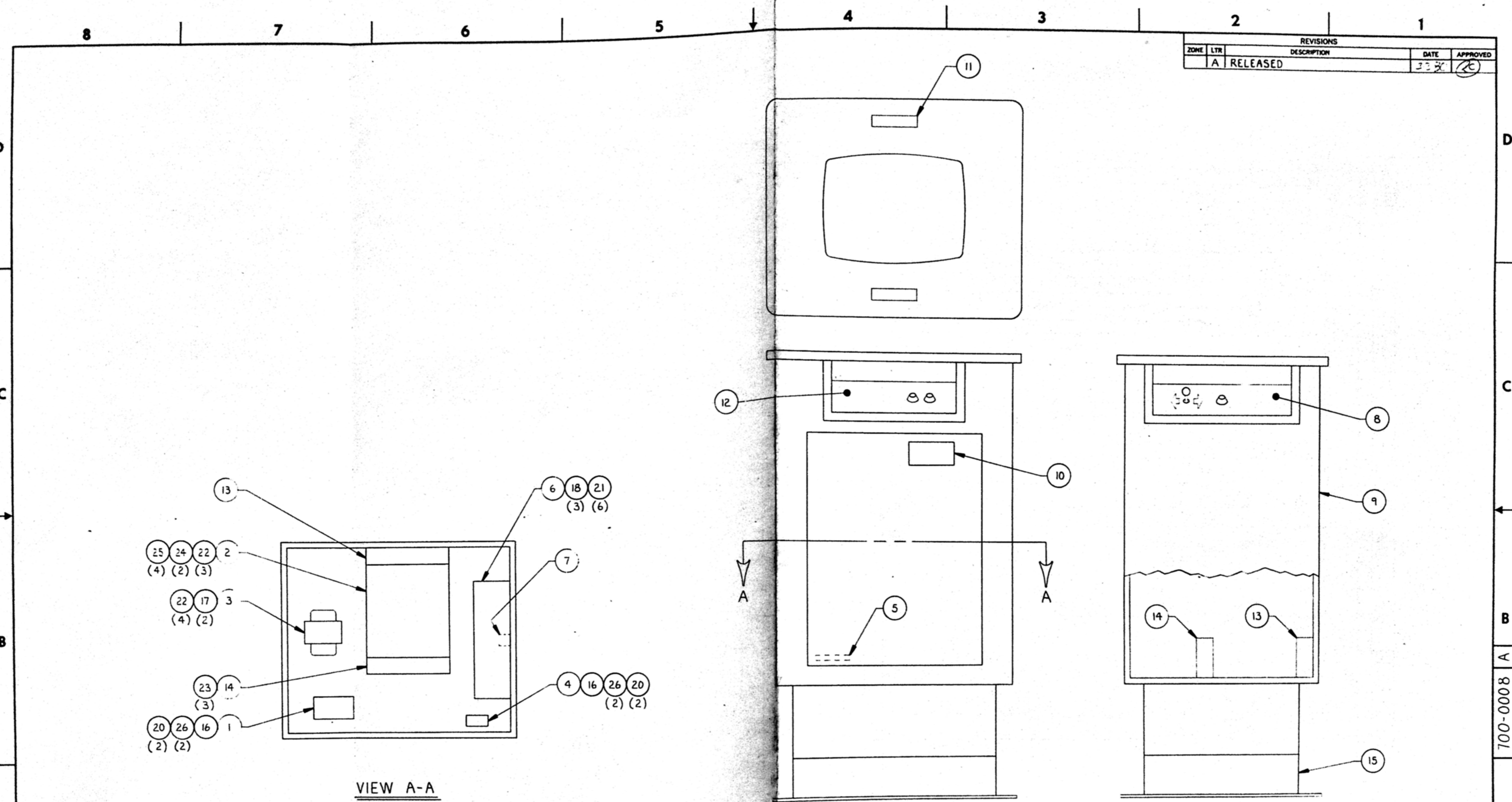
**Gremlin Industries, Inc.**  
San Diego, California 92123

ASSEMBLY —  
HARNESS MASTER  
A/F COCKTAIL

SIZE D CODE IDENT NO. DRAWING NO. 800-3022 REV. A

800-3022 A

REVISIONS				
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A	RELEASED		22 80	(Signature)

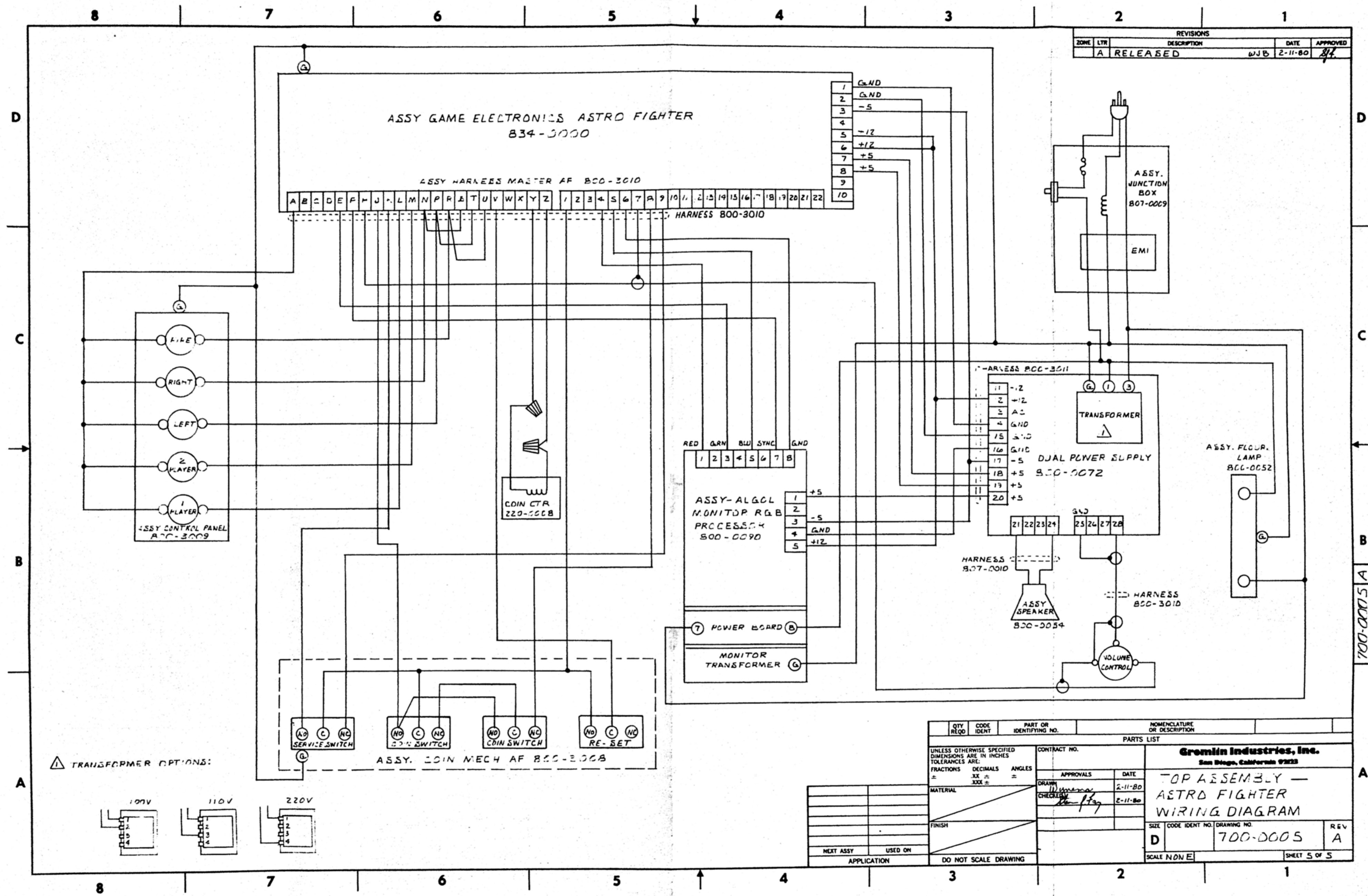


VIEW A-A

700-0008 A

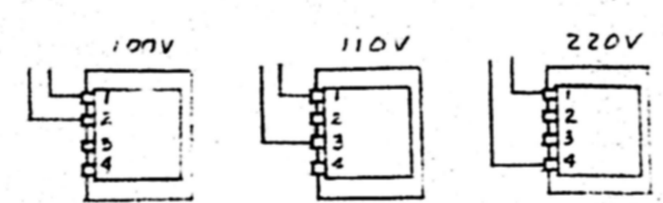
QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:			CONTRACT NO.	
FRACTIONS	DECIMALS	ANGLES	APPROVALS	DATE
±	XX ±	±	DRAWN MAHONEY	2-29-80
	XXX ±		CHECKED	
MATERIAL			Gremlin Industries, Inc. San Diego, California 92121	
FINISH			ASSY, TOP GAME, SLIMLINE ASTRO FIGHTER	
NEXT ASSY USED ON			SIZE	CODE IDENT NO. DRAWING NO.
APPLICATION			D	700-0008
DO NOT SCALE DRAWING			SCALE 1/4	REV A
			SHEET 4 OF 6	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	WJB 2-11-80	<i>[Signature]</i>



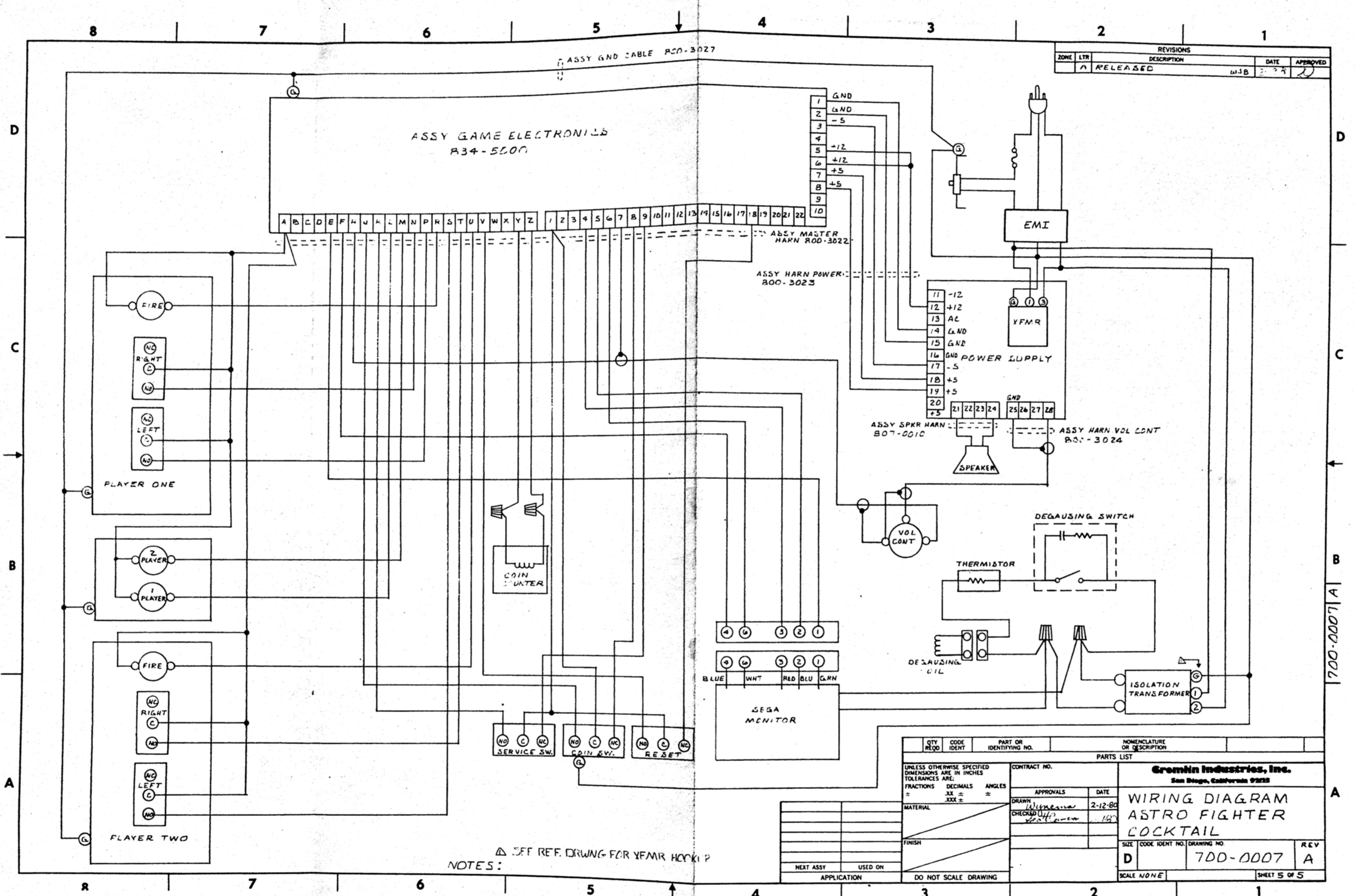
QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.	
FRACTIONS	DECIMALS	ANGLES	
±	.XX ±	°	
	.XXX ±		
MATERIAL		APPROVALS	DATE
FINISH		<i>[Signature]</i>	2-11-80
NEXT ASSY USED ON		CHECKED BY	2-11-80
APPLICATION		<b>Gremlin Industries, Inc.</b> San Diego, California 92123	
DO NOT SCALE DRAWING			TOP ASSEMBLY — ASTRO FIGHTER WIRING DIAGRAM
SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		700-0005	A
SCALE N/D N/E			SHEET 5 OF 5

⚠ TRANSFORMER OPTIONS:



700-0005 A

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	03B 2-7-80	



NOTES:  
 Δ OFF REF. DRWG. FOR YFMR HOOP P

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 ± .005 ± .001 ± .001 ±			
MATERIAL		CONTRACT NO.	<b>Gremlin Industries, Inc.</b> San Diego, California 92123
FINISH		APPROVALS	
NEXT ASSY USED ON APPLICATION		DRAWN: <i>W. ...</i> CHECKED: <i>...</i>	DATE: 2-12-80 WIRING DIAGRAM ASTRO FIGHTER COCKTAIL
DO NOT SCALE DRAWING		SIZE: D CODE IDENT NO.: 700-0007 DRAWING NO.: A	REV: A SCALE: NONE SHEET 5 OF 5

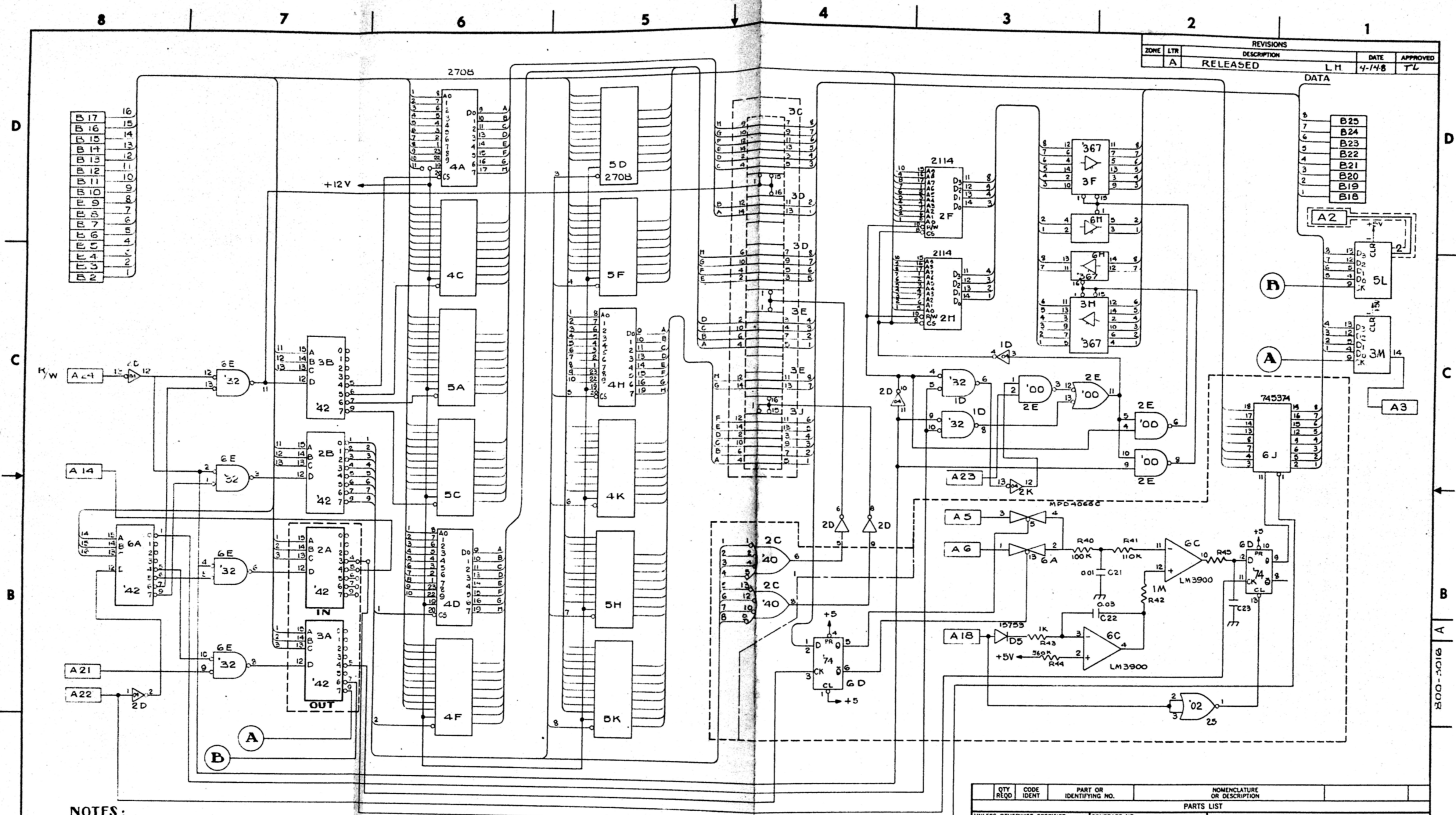
700-0007/A





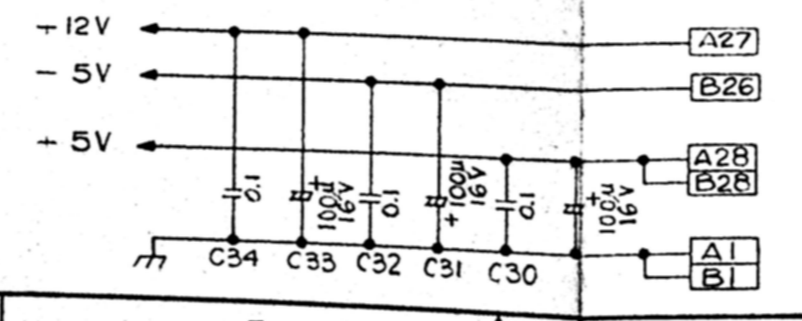


REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	L.M. 4-14-80	TL



**NOTES:**

1. SECTIONS OF BOARD INDICATED BY DASHED LINES APPLICABLE ONLY TO CERTAIN CONFIGURATIONS OF BOARDS.
2. 2708 PIN # 21 -5V, # 24 +5V, # 19 +12V, # 12 GND.
3. 2114 # 9 GND, # 18 +5V.
4. 3C, 3D, 3E, 3J, - WILL EITHER BE JUMPED OR USE 74LS367



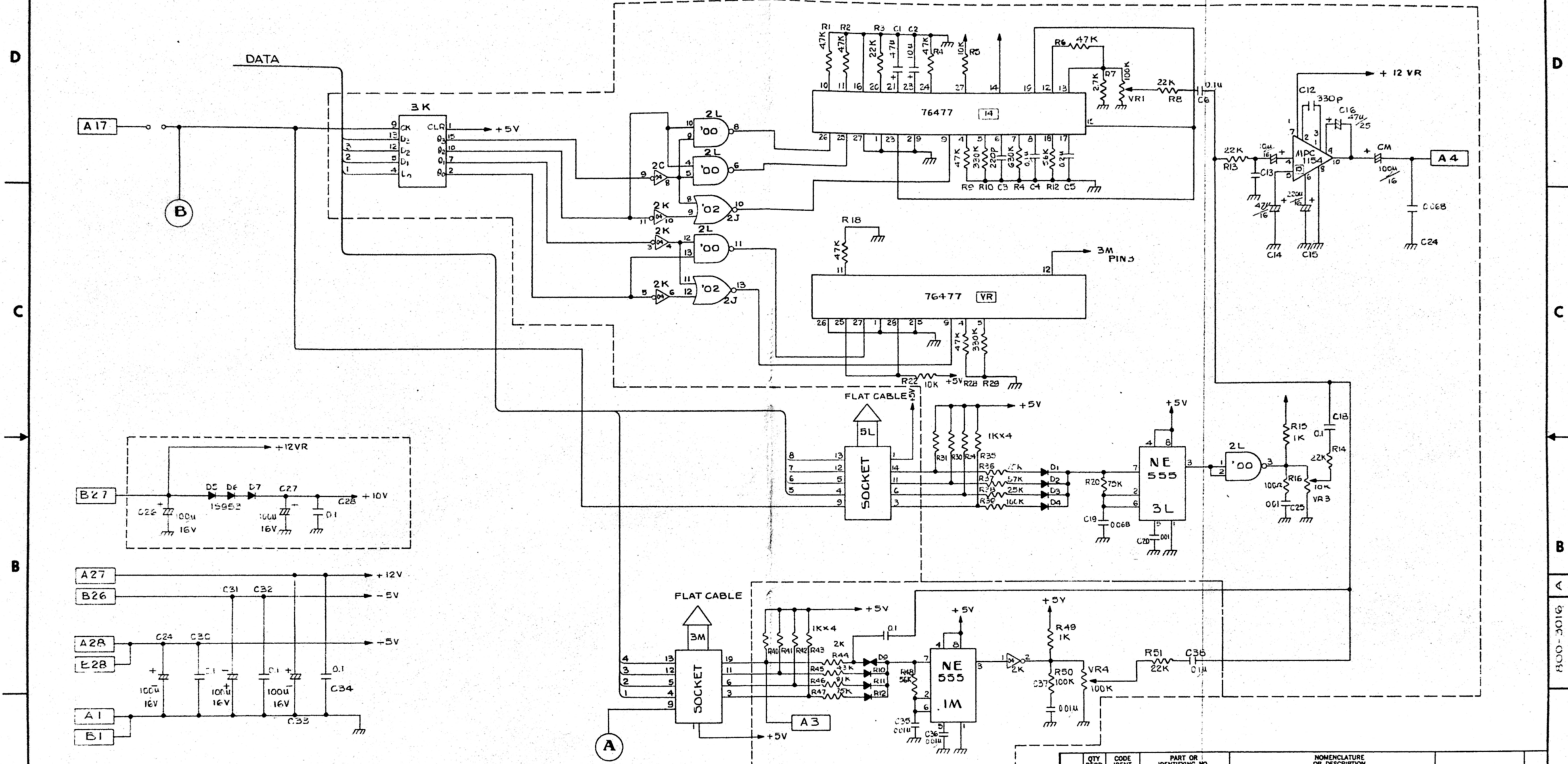
QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.	
FRACTIONS	DECIMALS	ANGLES	
±	.XX ±	±	
MATERIAL		APPROVALS	
		DRAWN LIEN VAN MO 4-2-80	
		CHECKED <i>Askeval</i> 4-14-80	
FINISH		DATE	
NOTED			
NEXT ASSY USED ON		SIZE CODE IDENT NO. DRAWING NO.	
APPLICATION		D 800-3016	
DO NOT SCALE DRAWING		REV A	
		SCALE NONE SHEET 1 OF 2	

**Gremlin Industries, Inc.**  
San Diego, California 92123

**ASSEMBLY ROM BOARD**

800-3016 REV A

REVISIONS					
ZONE	LTR	DESCRIPTION	DATE	APPROVED	
A		RELEASED	LH	4-14-80	T.J.

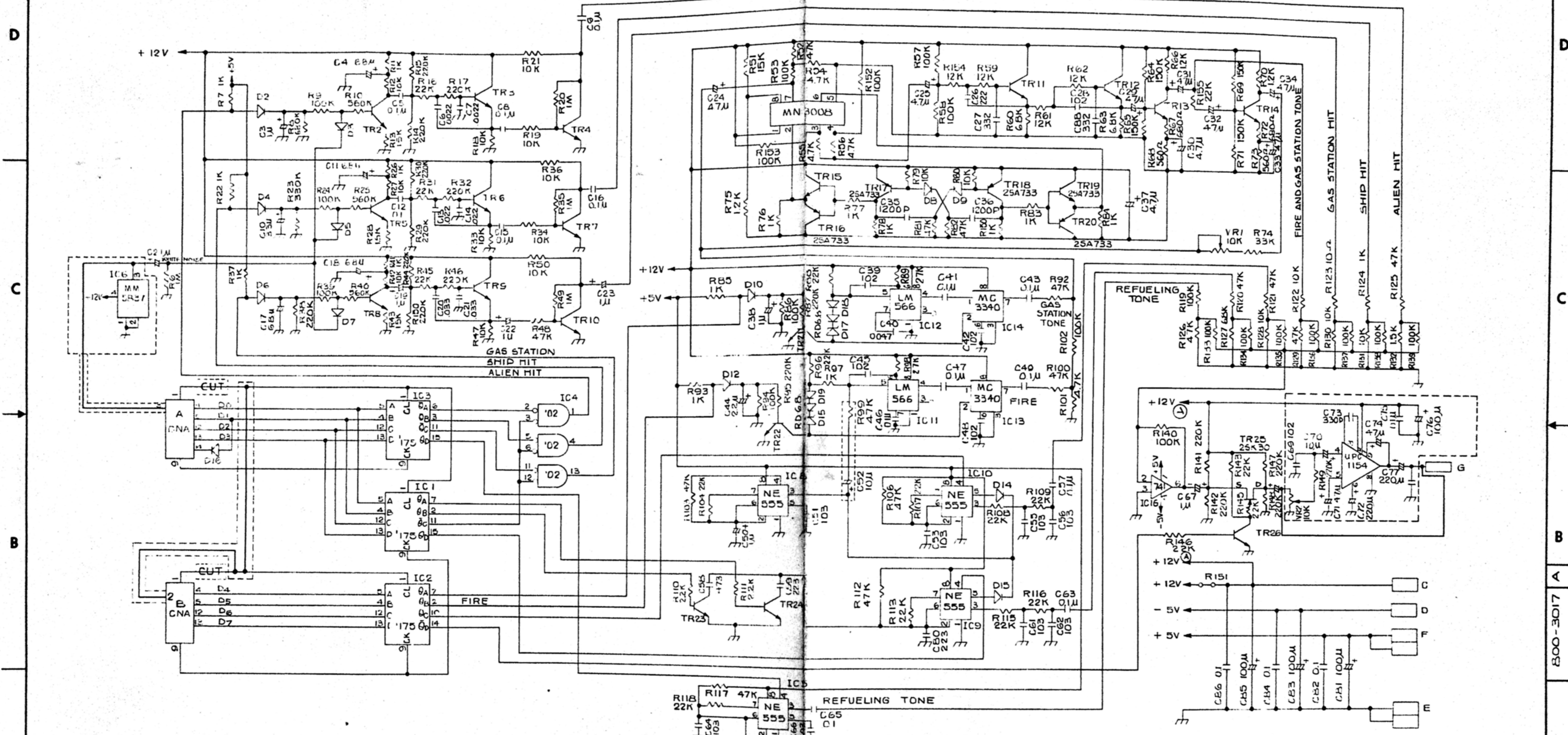


**NOTES:**  
 SECTIONS OF BOARD INDICATED BY DASHED LINES APPLICABLE ONLY TO CERTAIN CONFIGURATIONS OF BOARDS.

QTY	CODE	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.	
FRACTIONS	DECIMALS	ANGLES	
±	±	±	
MATERIAL		APPROVALS	DATE
FINISH		LIEN VAN HIO	4-8-80
NEXT ASSY USED ON		CHECKED	4-14-80
APPLICATION		NOTED	
DO NOT SCALE DRAWING		Gremlin Industries, Inc. San Diego, California 92123	
		<b>ASSEMBLY ROM BOARD</b>	
SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		800_3016	A
SCALE NONE		SHEET 2 OF 2	

800-3016

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



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

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

800-3017 A