

# TAC / SCANN



SEGA<sup>®</sup> / Gremlin<sup>®</sup>

PRELIMINARY OWNER'S MANUAL

MANUAL P/N 420-0795

TAC/SCAN™

PRELIMINARY OWNER'S MANUAL

MANUFACTURED BY

**SEGA**®/**Gremlin**®

TLX 910-335-1621

TAC/SCAN™ PRELIMINARY OWNER'S MANUAL

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## IMPORTANT NOTES

The following note is included in compliance with FCC rules:

**WARNING:** This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. As temporarily permitted by regulation, it has not been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of Part 15 FCC Rules, which are designed to provide reasonable protection against interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

## OTHER NOTES

**NEVER** replace any components with anything other than exact replacement parts.

**NEVER** remove circuit board connections while power is on.

**DO NOT** replace fuses with anything other than the proper value. A blown fuse indicates an overload condition within the game.

Replacing fuses with a higher value can cause severe damage to internal components if an overload occurs.

**ALWAYS** consult the manual before attempting repairs.

## INTRODUCTION

TAC/SCAN is a microprocessor based coin-operated electronic game, that makes extensive use of digital integrated circuitry and television monitor concepts. This manual is designed for the use of the maintenance technicians who possess a general working knowledge of solid-state circuitry and video monitor theory. Any individual NOT knowledgeable in these areas SHOULD NOT attempt repair of the electronic portions of the game.

In addition to this manual and training in electronics, troubleshooting and repair will be facilitated by: access to general electronic type handtools, a multimeter, a 50 or 100 Mhz oscilloscope and a logic probe would be helpful.

The information contained in this manual is preliminary and subject to change before printing of final manual. When available, final manuals will be shipped to distributors.

Technical assistance is available by calling (800) 854-1938. Questions or comments concerning TAC/SCAN or any of our games are welcome and should be directed to:

Customer Service Manager  
SEGA/Gremlin  
16250 Technology Drive  
San Diego, California 92127

OPTION SELECTION

<u>OPTION</u>	<u>SWITCH #1</u>							
	1	2	3	4	5	6	7	8
UPRIGHT	X	X	X	X	X	X	X	0
COCKTAIL	X	X	X	X	X	X	X	C
8 EXTRA SHIPS	X	X	X	X	0	0	X	X
6 EXTRA SHIPS	X	X	X	X	0	C	X	X
4 EXTRA SHIPS	X	X	X	X	C	0	X	X
2 EXTRA SHIPS	X	X	X	X	C	C	X	X
GAME DIFFICULTY: HARD	X	X	0	0	X	X	X	X
MEDIUM	X	X	C	0	X	X	X	X
EASY	X	X	C	C	X	X	X	X
BONUS SHIP: 10,000 POINTS	0	0	X	X	X	X	X	X
20,000 POINTS	0	C	X	X	X	X	X	X
30,000 POINTS	C	0	X	X	X	X	X	X
NO BONUS SHIP	C	C	X	X	X	X	X	X

<u>OPTION</u>	<u>SWITCH #2</u>							
	1	2	3	4	5	6	7	8
4 COINS/1 CREDIT	C	C	C	C	C	C	C	C
3 COINS/1 CREDIT	C	C	C	0	C	C	C	0
2 COINS/1 CREDIT	C	C	0	C	C	C	0	C
1 COIN/1 CREDIT	C	C	0	0	C	C	0	0
1 COIN/2 CREDIT	C	0	C	C	C	0	C	C
1 COIN/3 CREDIT	C	0	C	0	C	0	C	0



OPTION SELECTION - CONT.

<u>OPTION</u>	<u>SWITCH #2</u>							
	1	2	3	4	5	6	7	8
1 COIN/2 CREDIT	0	0	0	0	0	0	0	0
2 COIN/4 CREDIT								
3 COIN/6 CREDIT								
4 COIN/9 CREDIT								

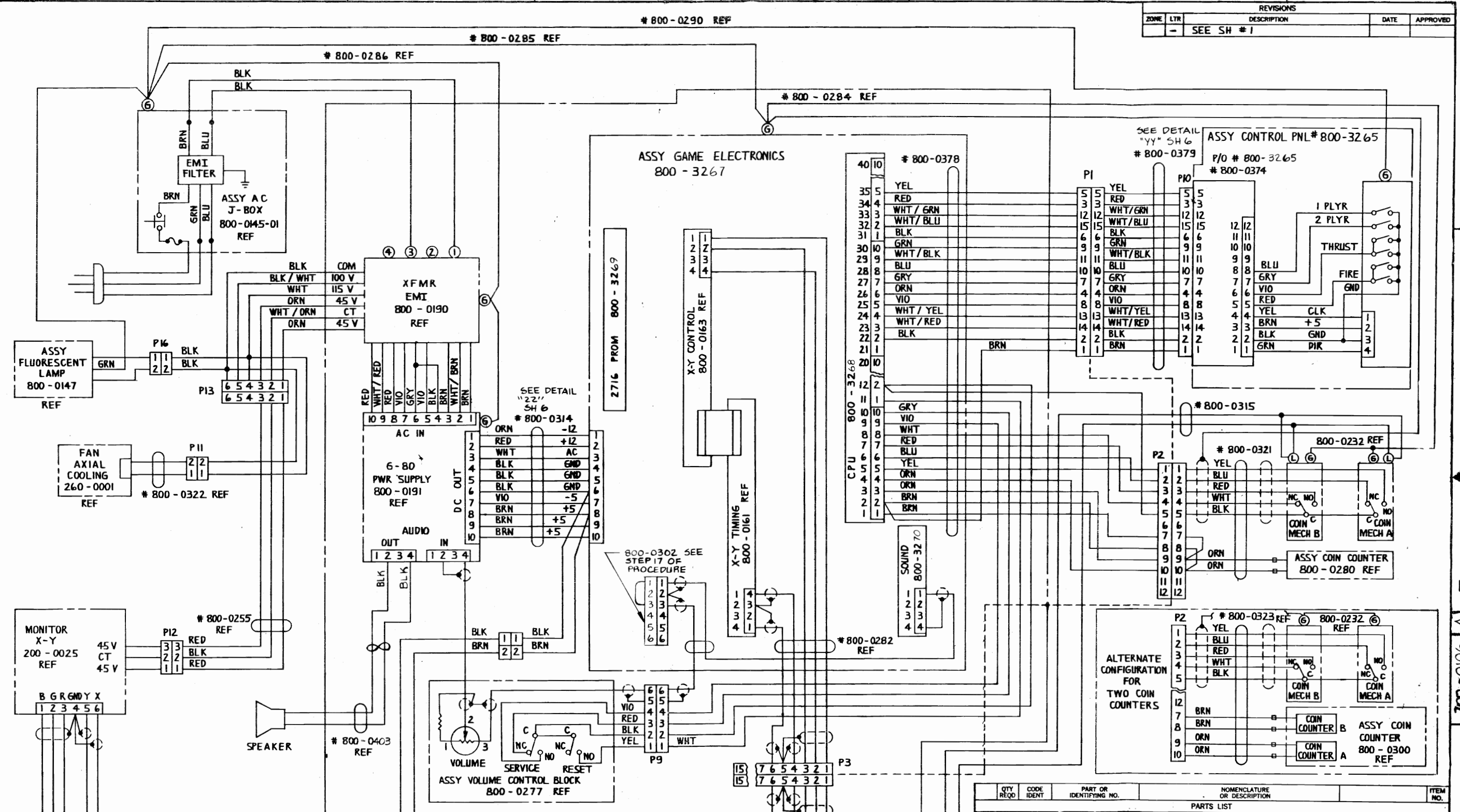
X = NOT USED

0 = OPEN

C = CLOSED

8 7 6 5 4 3 2 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
-	-	SEE SH #1		

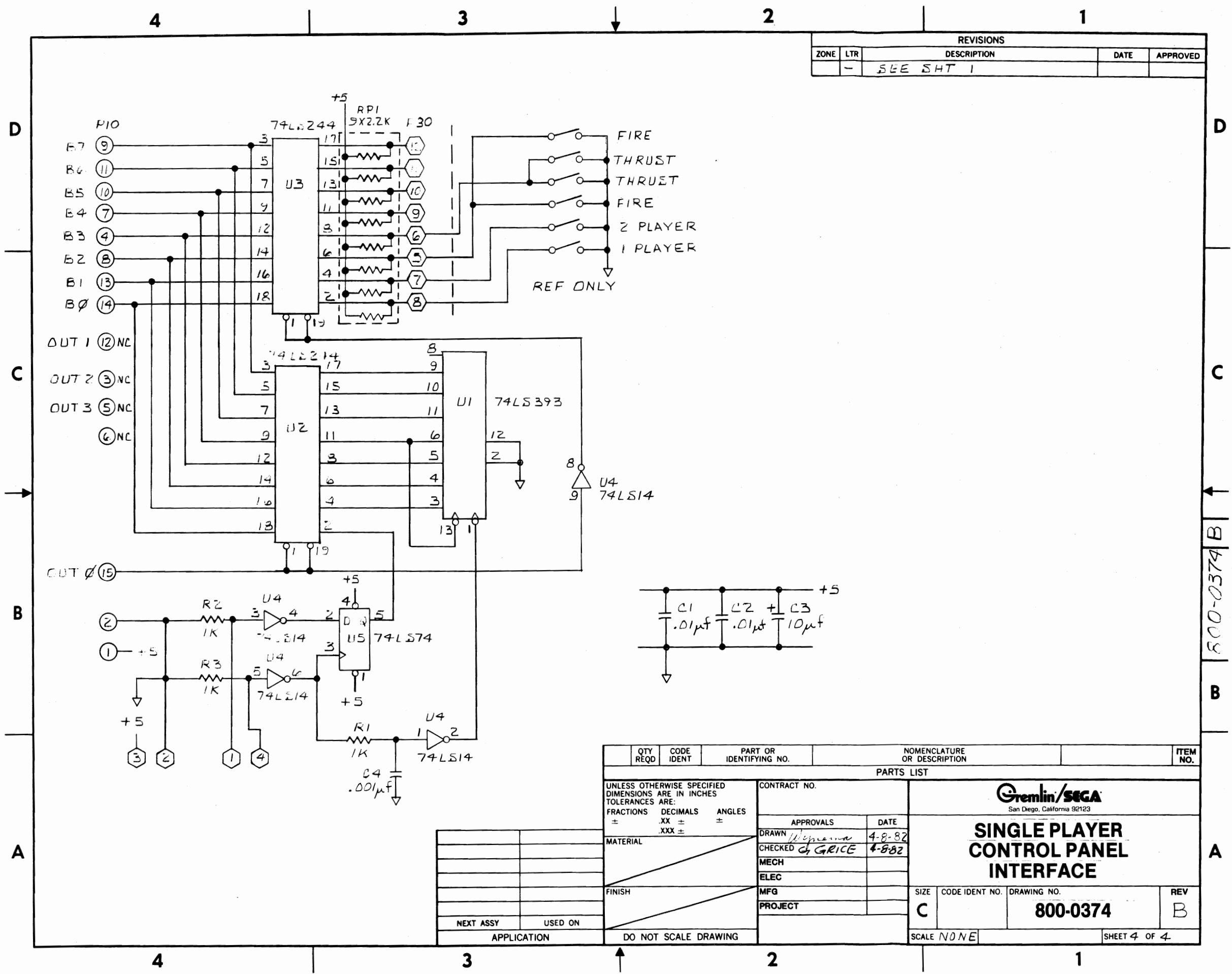


QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:				
FRACTIONS	DECIMALS	ANGLES		
±	.XX ±	±		
CONTRACT NO.				
Gremlin/SEGA San Diego, California 92123				
<b>CABINET WIRING DIAGRAM</b>				
APPROVALS: <i>[Signature]</i> DATE: 8-10-82				
CHECKED: <i>[Signature]</i> DATE: 8-11-82				
MATERIAL: _____				
FINISH: _____				
SIZE: <b>D</b> CODE IDENT NO.: <b>700-0106</b> DRAWING NO. <b>700-0106</b> REV <b>A</b>				
SCALE: NONE SHEET 7 OF _____				

700-0106 A B C D



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
-	-	SEE SH 1		



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.		
FRACTIONS	DECIMALS	ANGLES		
±	.XX ±	±		
	.XXX ±			
MATERIAL		APPROVALS		
		DATE		
		DRAWN <i>W. G. GRICE</i> 4-8-82		
		CHECKED <i>G. GRICE</i> 4-8-82		
		MECH		
		ELEC		
		MFG		
		PROJECT		
NEXT ASSY		USED ON		REV
APPLICATION		DO NOT SCALE DRAWING		B

**Gremlin/SEGA**  
San Diego, California 92123

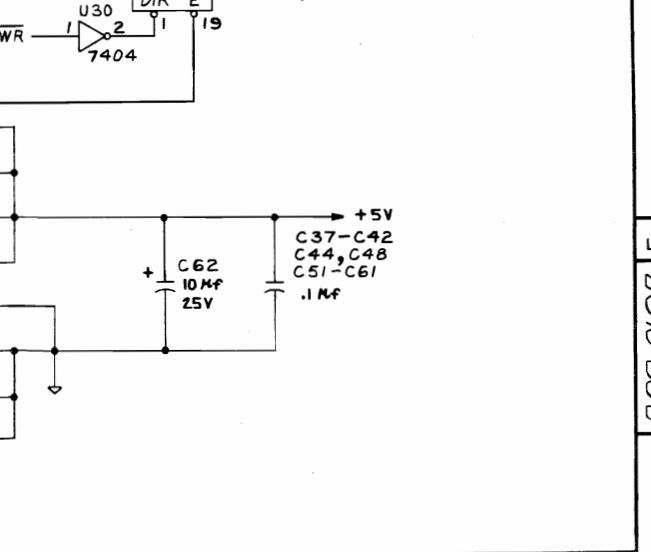
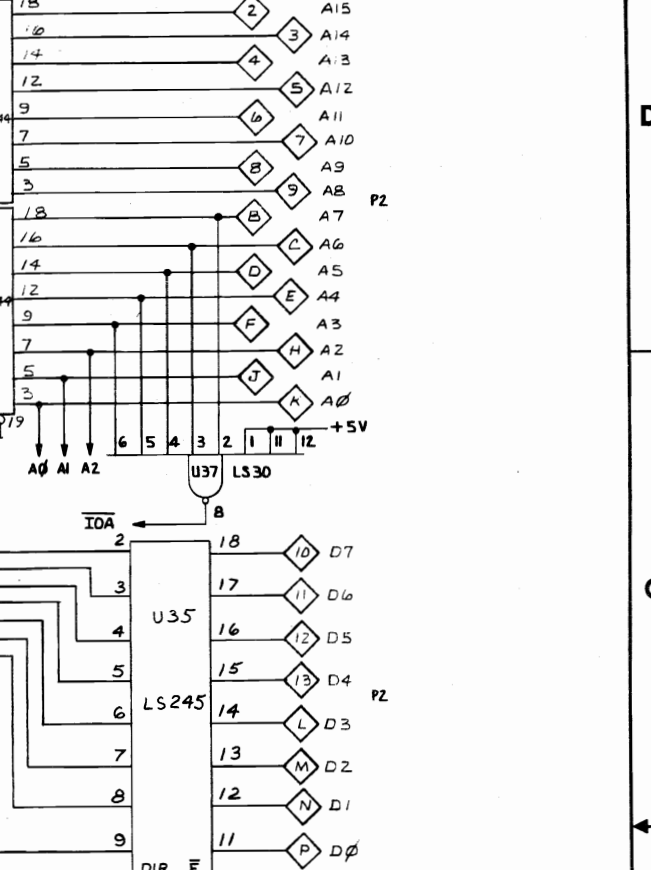
**SINGLE PLAYER CONTROL PANEL INTERFACE**

DRAWING NO. **800-0374**

SHEET 4 OF 4

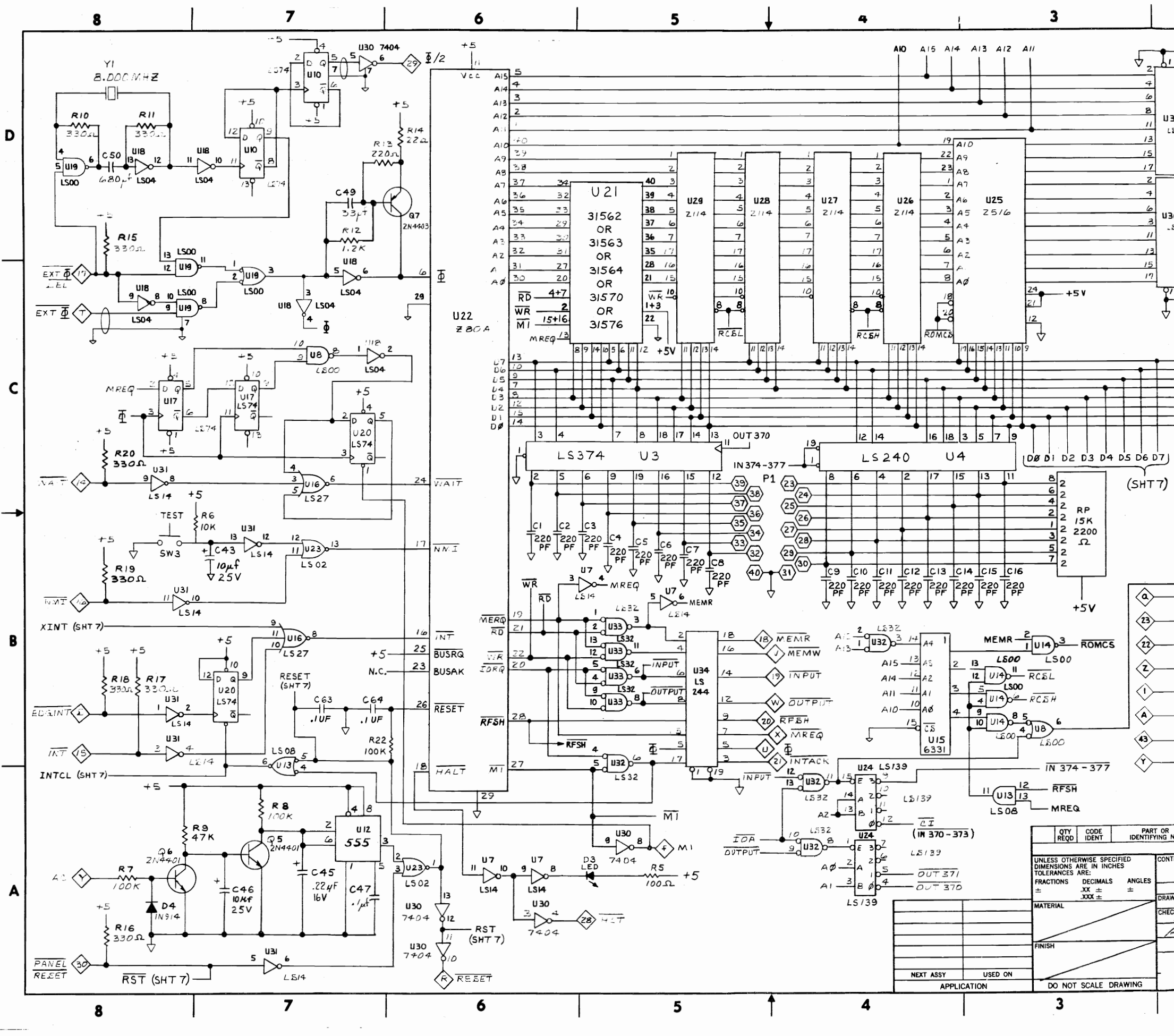
800-0374 B

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
SEE SHEET 1 FOR REVISIONS CTC			10-28-80	A. ARON



QTY	CODE	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:			
FRACTIONS	DECIMALS	ANGLES	
±	.XX ±	XXX ±	
PARTS LIST			
<b>Gremlin Industries, Inc.</b> San Diego, California 92123			
APPROVALS		DATE	
DRAWN <i>W. J. ...</i>		7/17/80	
CHECKED <i>J. ...</i>		10-28-80	
MATERIAL		A.R.M.	
FINISH			
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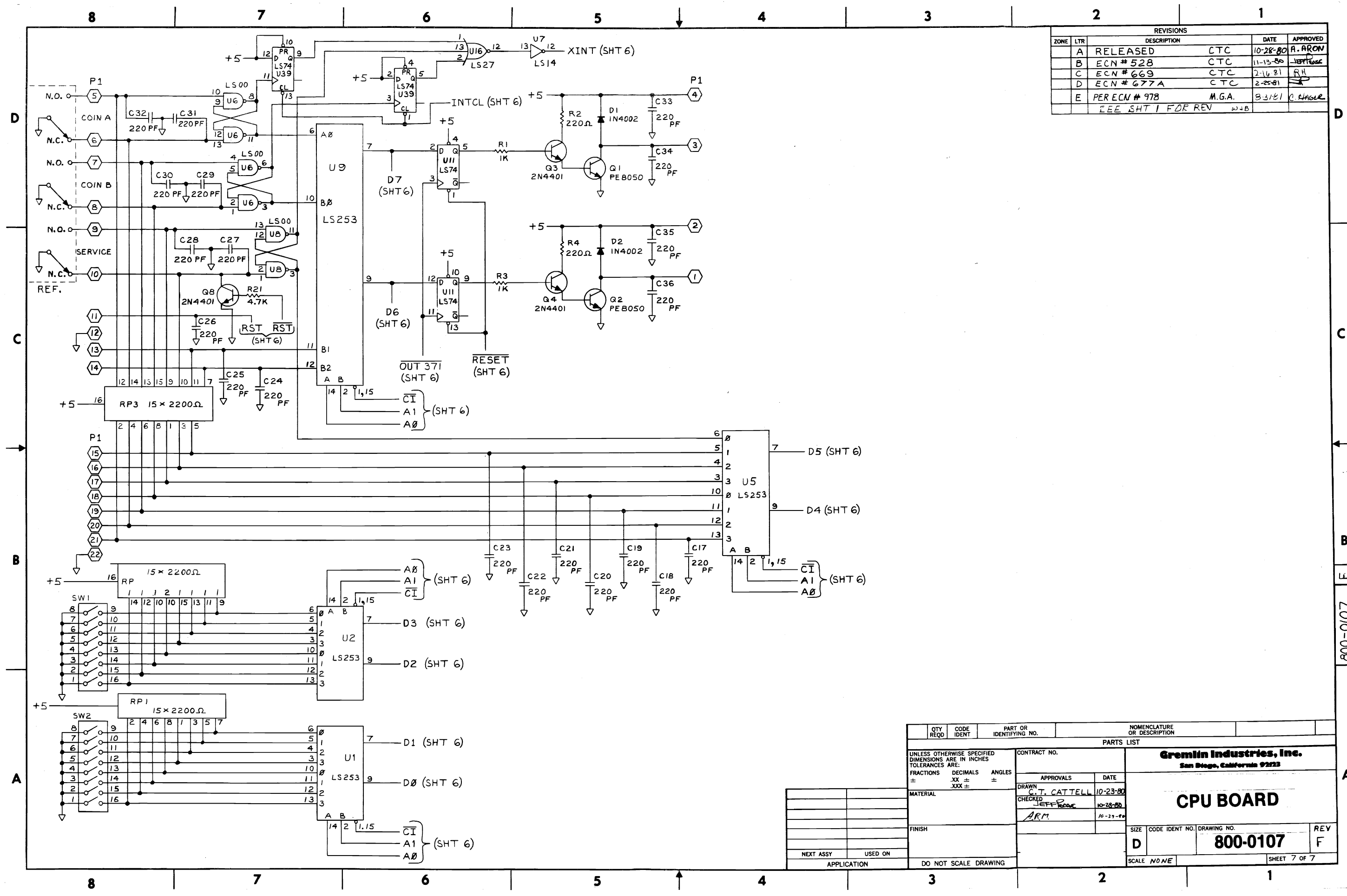
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 MATERIAL \_\_\_\_\_  
 FINISH \_\_\_\_\_  
 NEXT ASSY \_\_\_\_\_ USED ON \_\_\_\_\_  
 APPLICATION \_\_\_\_\_ DO NOT SCALE DRAWING



8 7 6 5 4 3 2 1

D C B A

800-0107 F

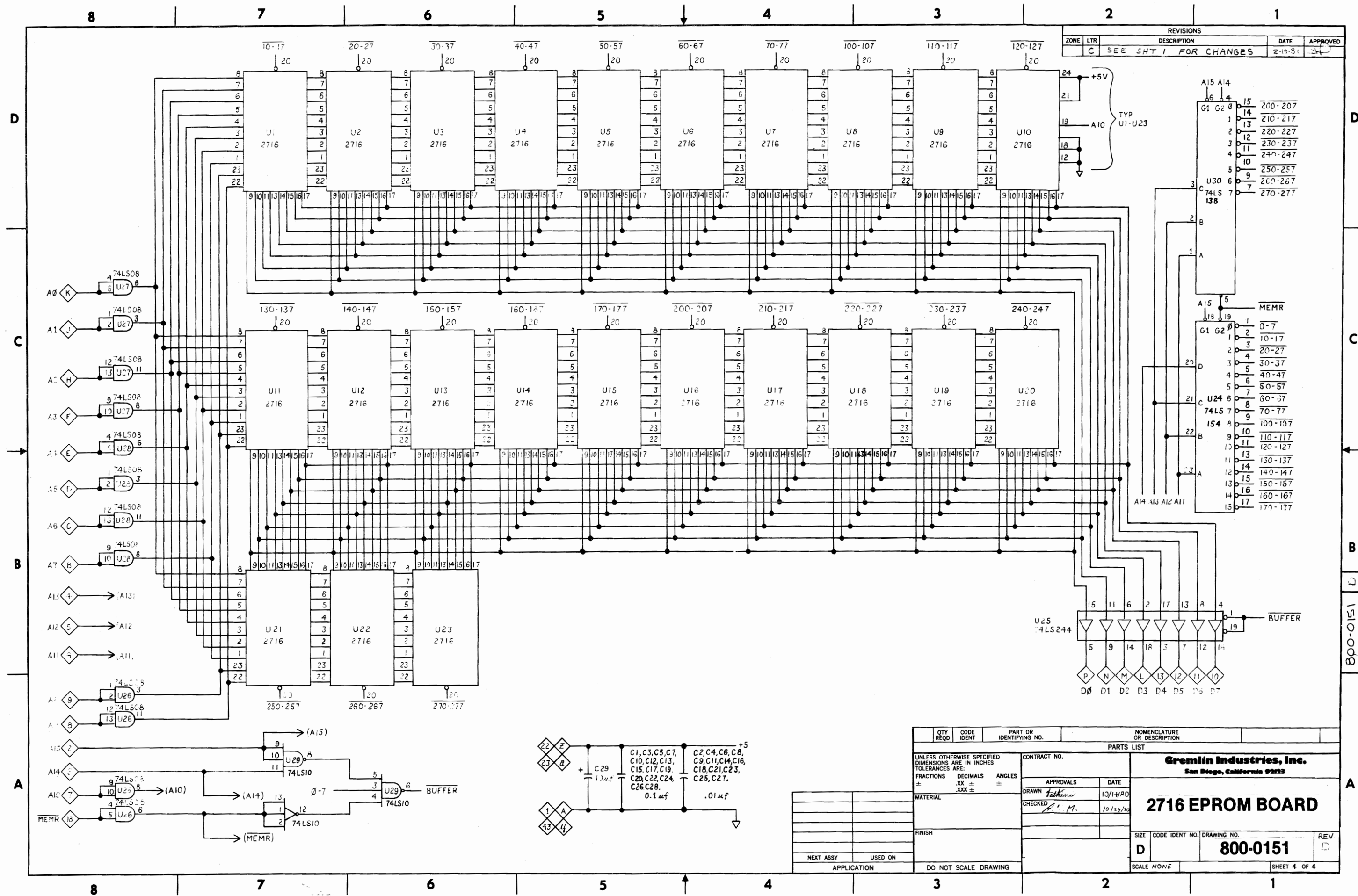


REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	CTC	10-28-80 A. ARON
B		ECN # 528	CTC	11-13-80 JEFF
C		ECN # 669	CTC	2-10-81 RH
D		ECN # 677A	CTC	2-25-81
E		PER ECN # 978	M.G.A.	8-31-81 C. HANDEL
SEE SHT 1 FOR REV WJB				

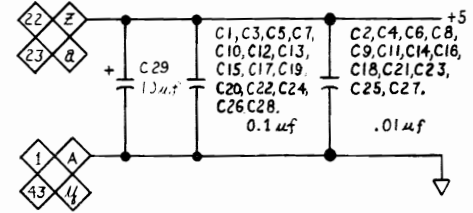
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PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.	
FRACTIONS	DECIMALS	ANGLES	<b>Gremlin Industries, Inc.</b> San Diego, California 92123
±	.XX ±	±	
MATERIAL		APPROVALS	DATE
FINISH		DRAWN	10-23-80
NEXT ASSY		CHECKED	10-28-80
USED ON		ARM	10-29-80
APPLICATION		DO NOT SCALE DRAWING	
SCALE NONE			REV F

**CPU BOARD**

800-0107

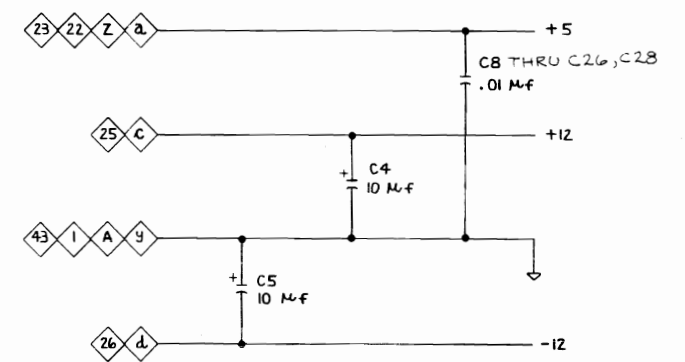
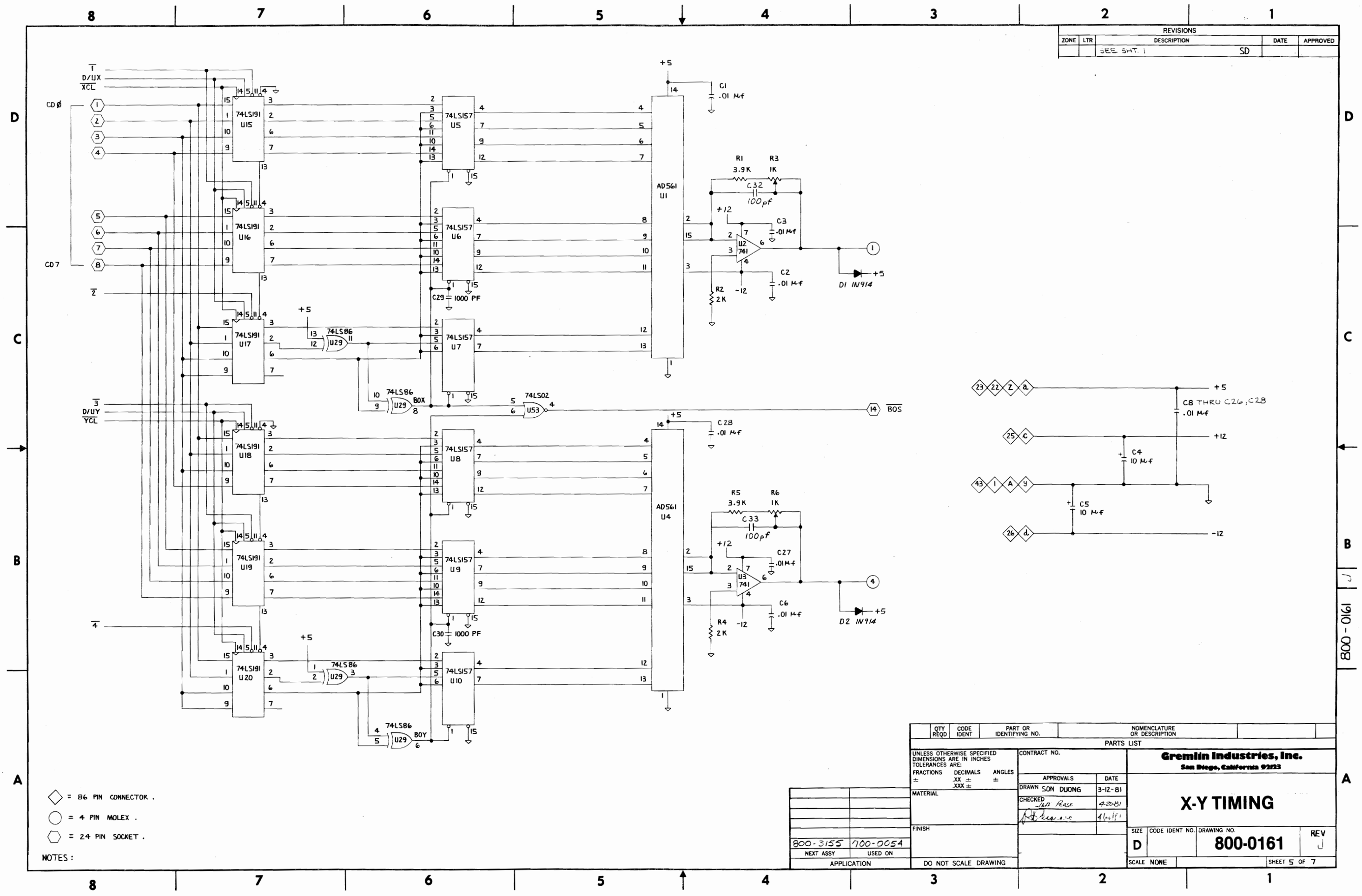


QTY	REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
				UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .XX ± .XXX ±
PARTS LIST				CONTRACT NO.
APPROVALS				DATE
DRAWN <i>Talkin</i>				10/14/80
CHECKED <i>P. M.</i>				10/29/80
MATERIAL				FINISH
NEXT ASSY				USED ON
APPLICATION				DO NOT SCALE DRAWING
<b>Gremlin Industries, Inc.</b> San Diego, California 92123				<b>2716 EPROM BOARD</b>
SIZE				CODE IDENT NO. DRAWING NO.
D				800-0151
SCALE NONE				SHEET 4 OF 4



800-0151

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHT. 1		SD

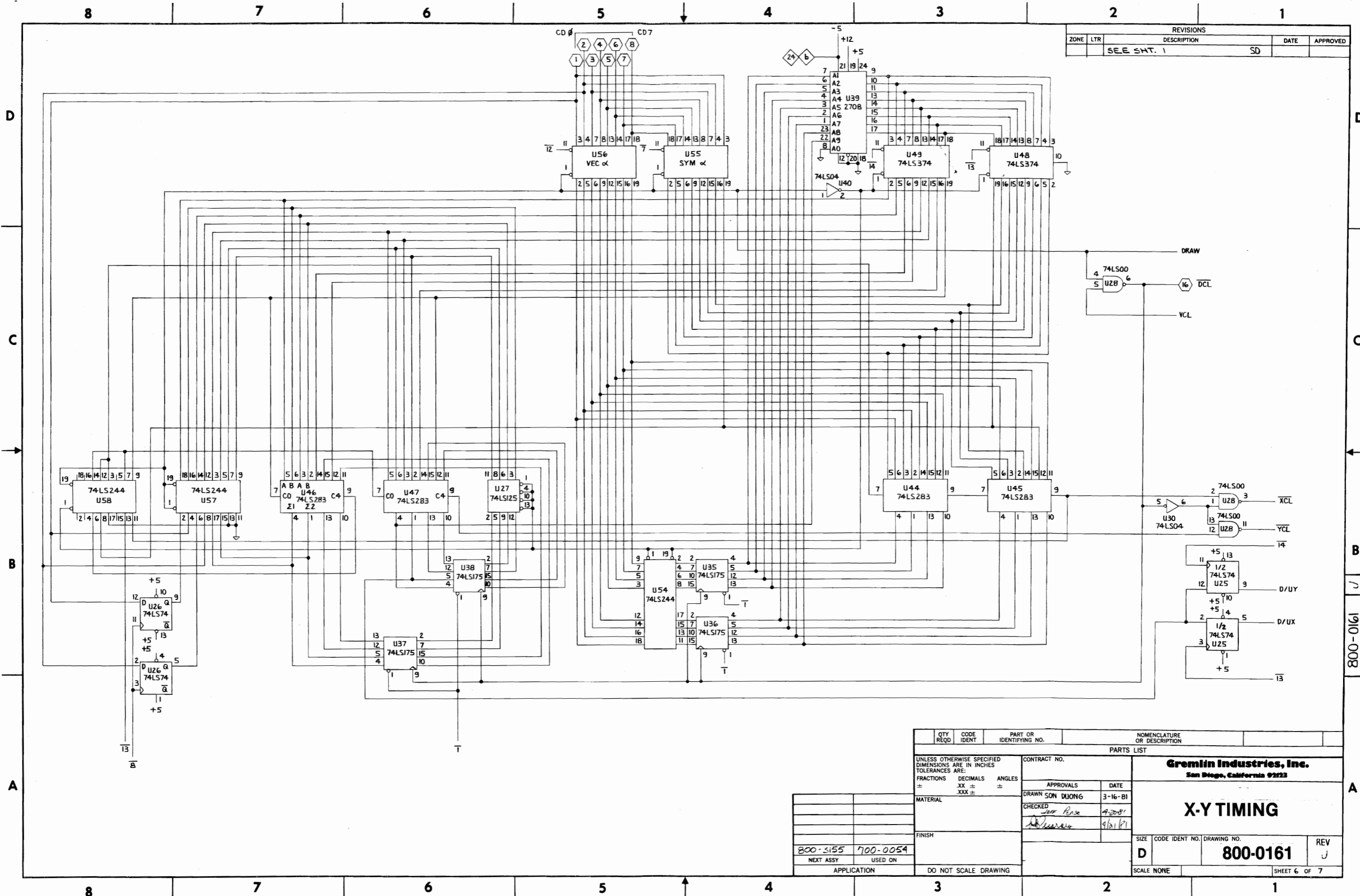


- NOTES:
- ◇ = 86 PIN CONNECTOR .
  - = 4 PIN MOLEX .
  - ⬡ = 24 PIN SOCKET .

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	DATE	
FINISH		CHECKED	DRAWN	
800-3155		SON DUONG	3-12-81	
NEXT ASSY USED ON		42081	REV	
APPLICATION		46081	D	
DO NOT SCALE DRAWING		SIZE CODE IDENT NO. DRAWING NO.		SCALE NONE
		800-0161		SHEET 5 OF 7

800-0161

ZONE		LTR		REVISIONS		DATE	APPROVED
		SEE SHT. 1		SD			



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	
		DRAWN SON DUONG 3-16-81	
FINISH		CHECKED <i>John Rense</i> 4/20/81	
		<i>Adrian</i> 9/21/81	
800-3155 700-0054		SIZE CODE IDENT NO. DRAWING NO.	
NEXT ASSY USED ON		D 800-0161	
APPLICATION		DO NOT SCALE DRAWING	
		SCALE NONE	

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

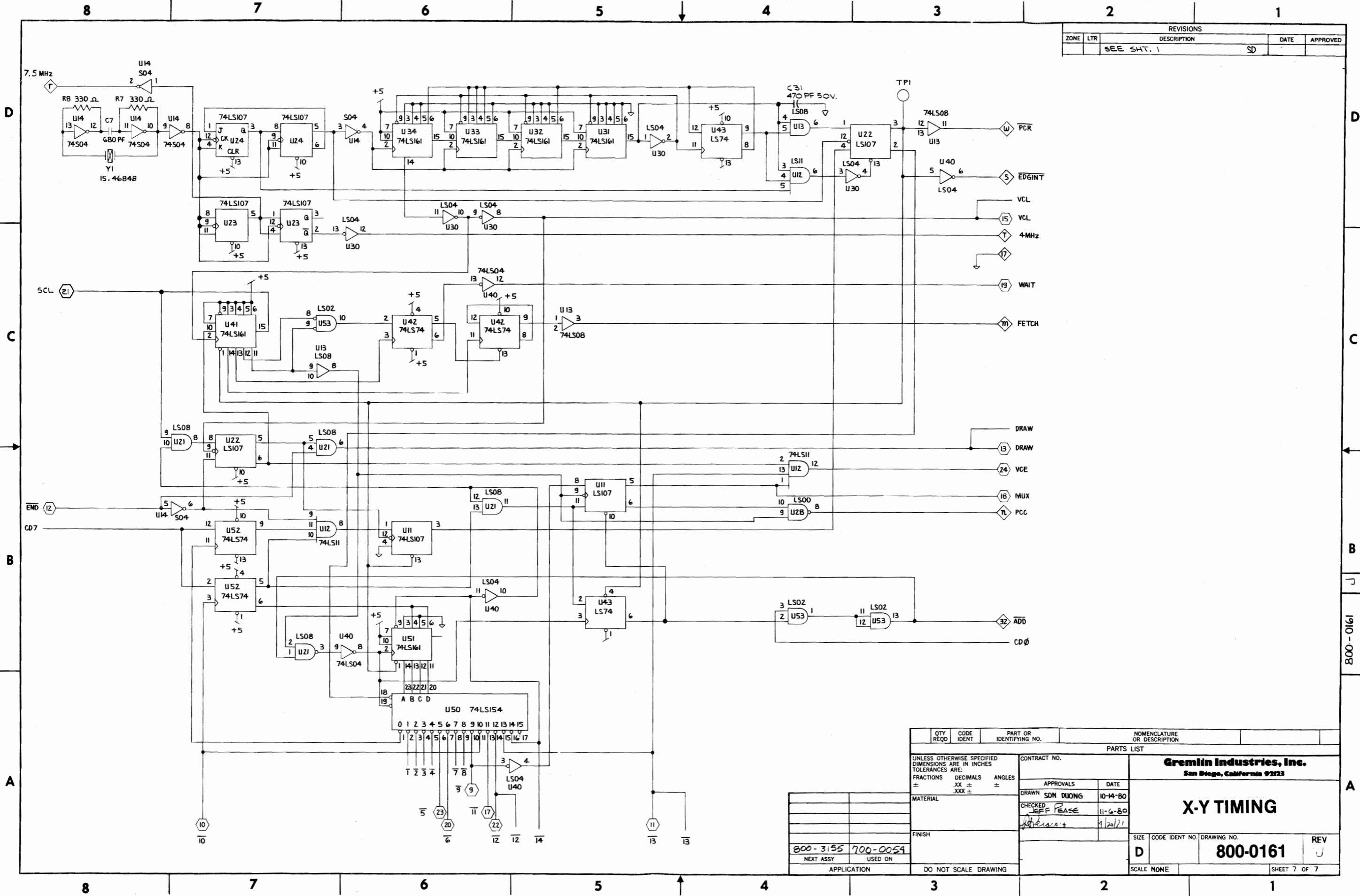
# X-Y TIMING

800-0161

SHEET 6 OF 7

800-008

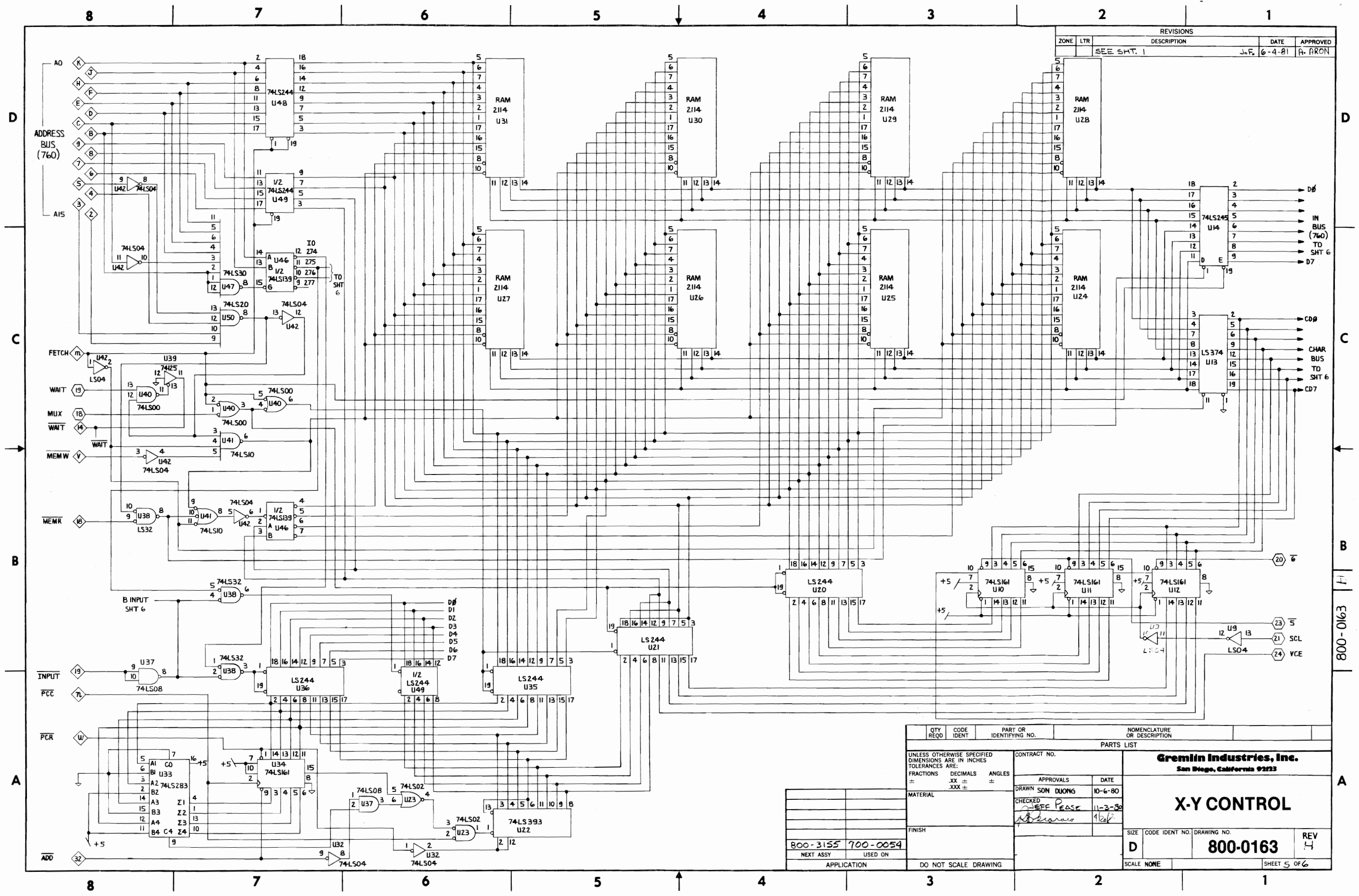
ZONE		LTR		REVISIONS		DATE		APPROVED	
				SEE SHT. 1				SD	



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
		DRAWN	10-14-80
		CHECKED	11-6-80
			1/20/71
FINISH			
800-3155	700-0054		
NEXT ASSY	USED ON		
APPLICATION		DO NOT SCALE DRAWING	

<b>Gremlin Industries, Inc.</b> San Diego, California 92123		
<b>X-Y TIMING</b>		
SIZE	CODE IDENT NO.	DRAWING NO.
D		800-0161
SCALE NONE		REV J
		SHEET 7 OF 7

800-0161



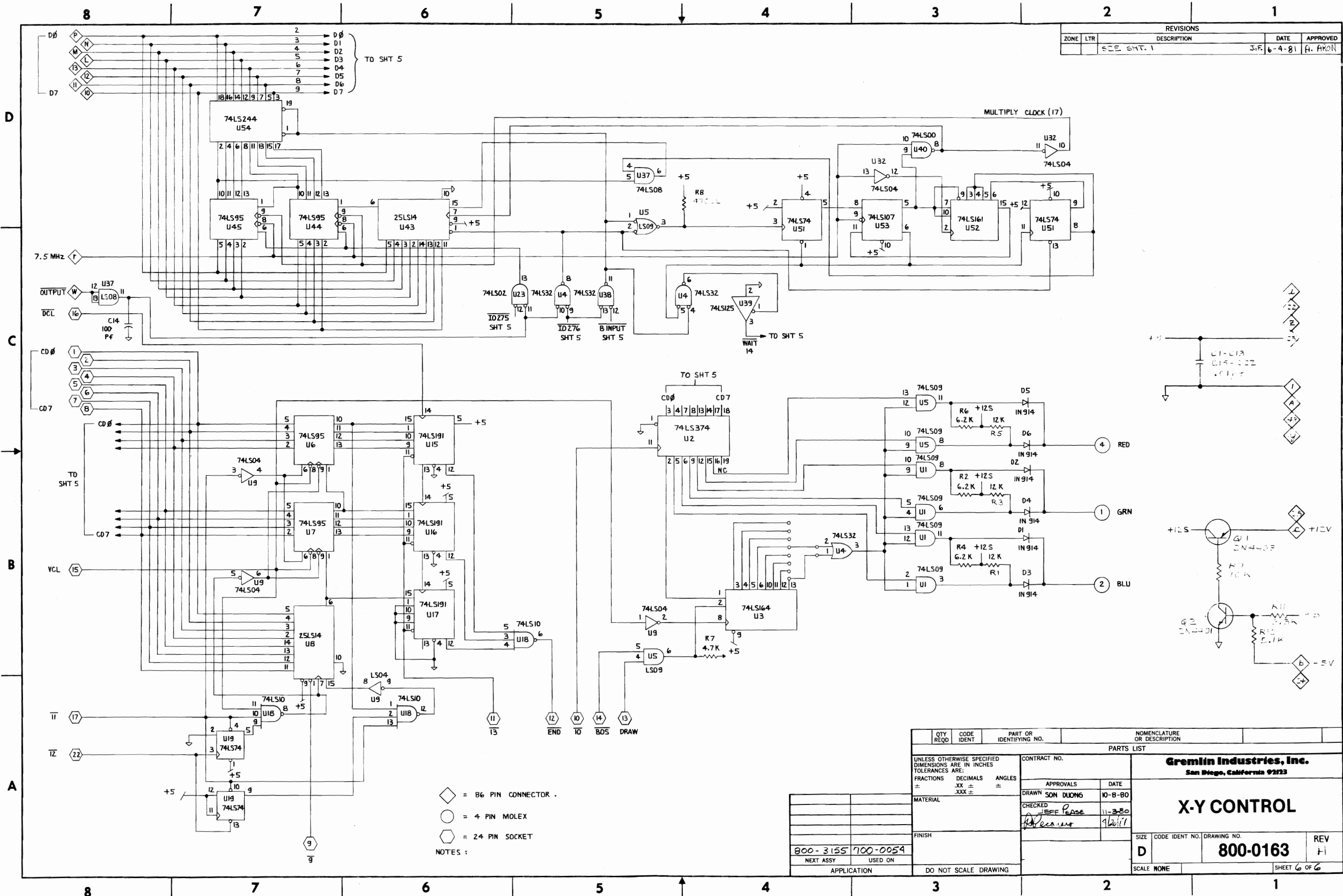
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHT. 1	Jo F. 6-4-81	R. ARON

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 SON DUONG	10-6-80
±	.XXX ±	±	CHECKED JEFF PEASE	11-3-80
MATERIAL		FINISH		
800-3155		700-0054		
NEXT ASSY		USED ON		
APPLICATION		DO NOT SCALE DRAWING		
GREMLIN INDUSTRIES, INC. San Diego, California 92123		<b>X-Y CONTROL</b>		
SIZE	CODE IDENT NO.	DRAWING NO.		REV
D		<b>800-0163</b>		4
SCALE	NONE	SHEET 5 OF 6		

800-0163



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHT. 1	J.F. 6-4-81	H. ARON



◆ = 86 PIN CONNECTOR  
 ○ = 4 PIN MOLEX  
 □ = 24 PIN SOCKET  
 NOTES:

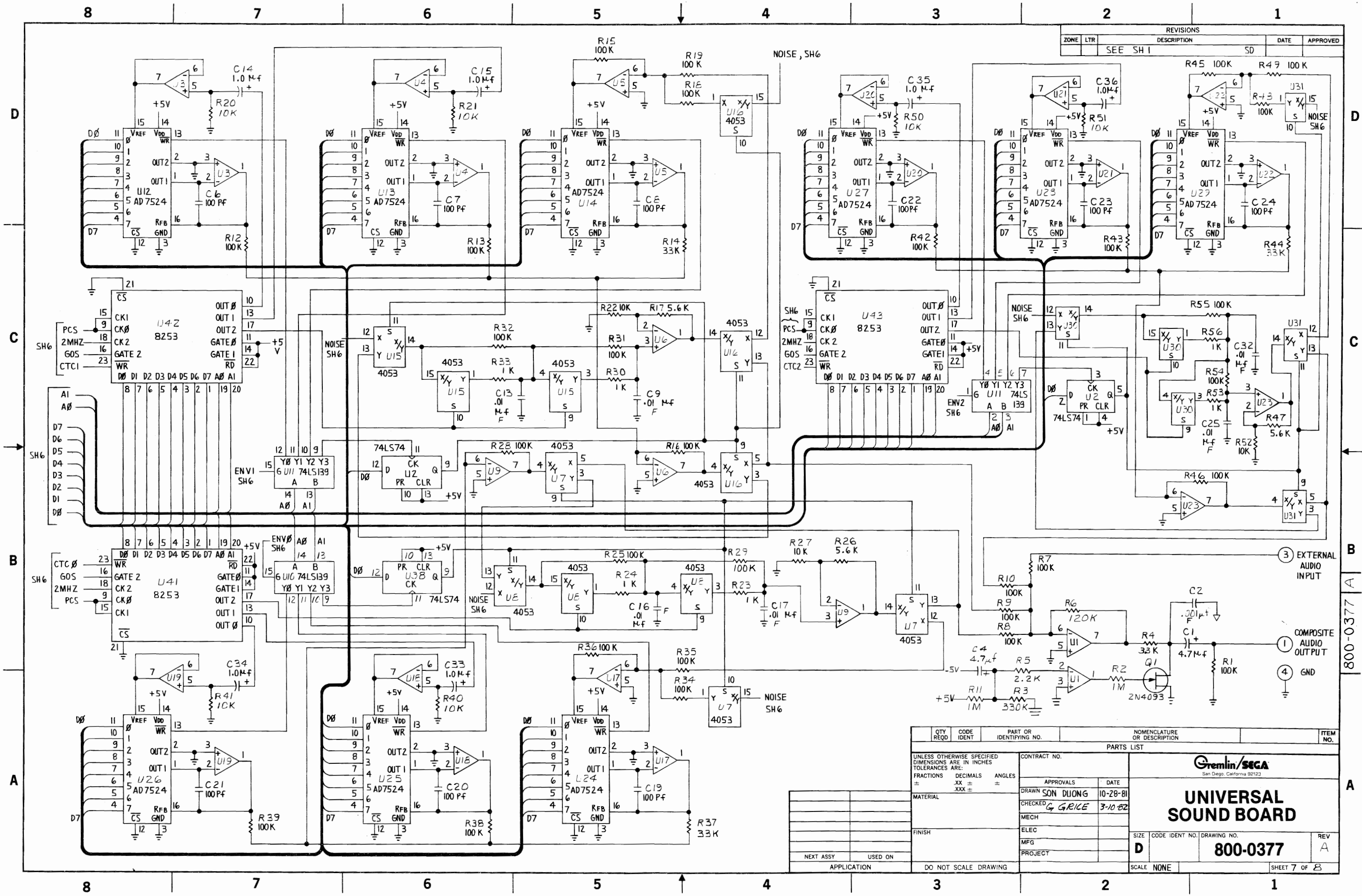
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PARTS LIST			
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FRACTIONS	DECIMALS	ANGLES	
±	.XX ±	±	
MATERIAL		APPROVALS	DATE
FINISH		DRAWN SON DUONG	10-8-80
		CHECKED JEFF PEASE	11-2-80
		APPROVED [Signature]	9/21/81
SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		800-0163	H
SCALE NONE		SHEET 6 OF 6	

800-3155	700-0059
NEXT ASSY	USED ON
APPLICATION	

DO NOT SCALE DRAWING

800-0163

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SH 1	SD	



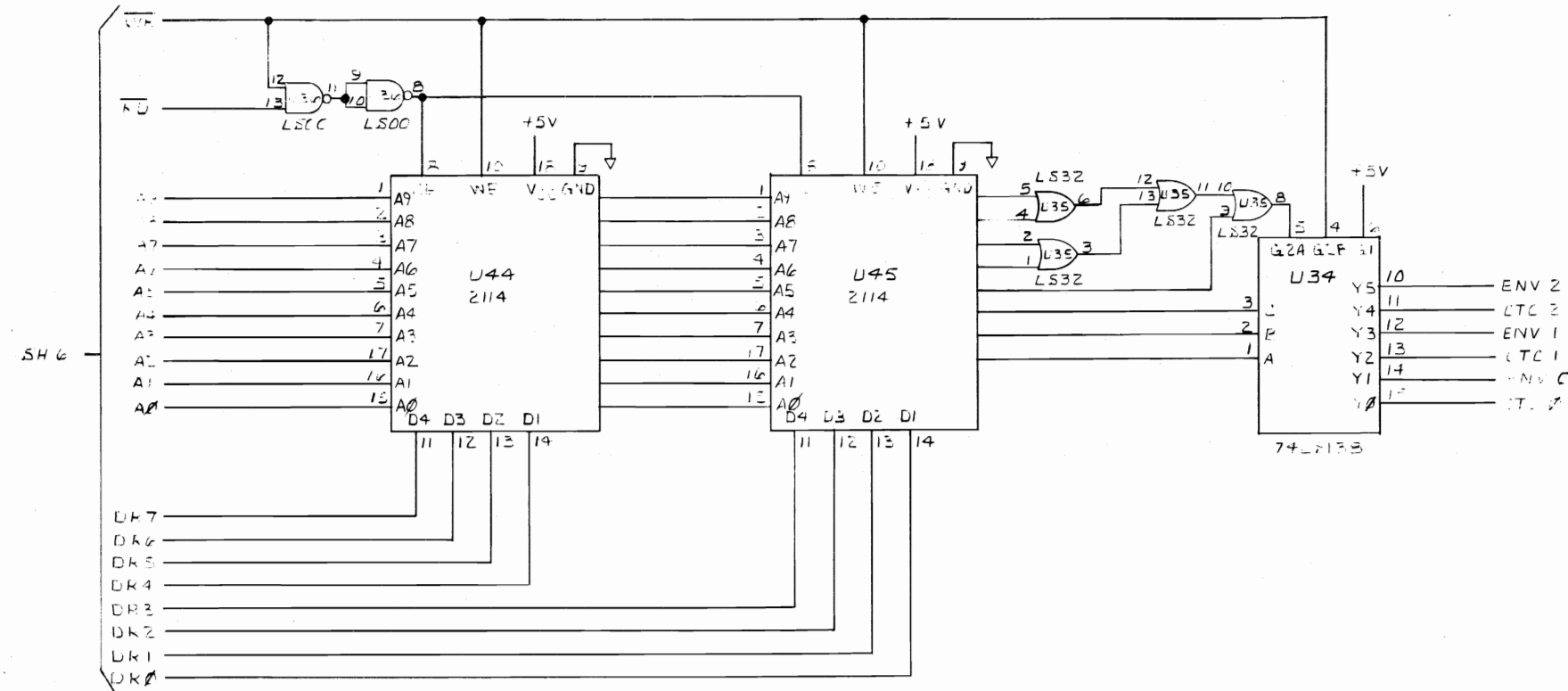
QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.		
FRACTIONS	DECIMALS	ANGLES	APPROVALS	DATE
±	±	±	DRAWN SON DUONG	10-28-81
MATERIAL		CHECKED G. GRICE 3-10-82		
FINISH		ELEC		
NEXT ASSY		MFG		
USED ON		PROJECT		
APPLICATION		DO NOT SCALE DRAWING		

<b>Gremlin/SCGA</b> San Diego, California 92123	
<b>UNIVERSAL SOUND BOARD</b>	
SIZE	CODE IDENT NO. DRAWING NO.
D	800-0377
SCALE	NONE
SHEET 7 of 8	

800-0377 A

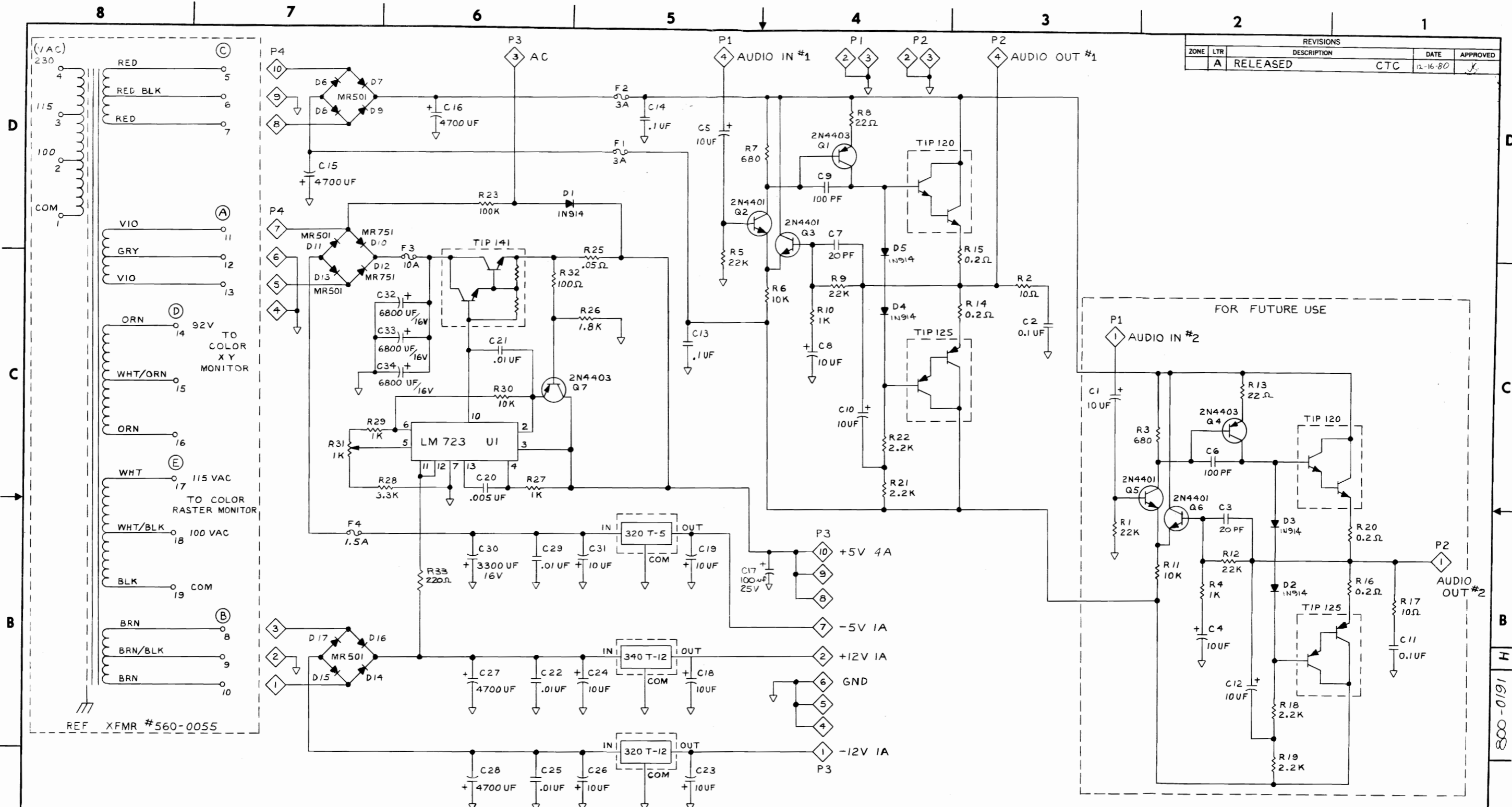
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
-		SEE SHT 1		WJB



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.		
FRACTIONS ±	DECIMALS .XX ±	ANGLES ±		
MATERIAL		APPROVALS	DATE	<b>UNIVERSAL SOUND BOARD</b> DRAWN <i>Wynona</i> 4-14-82 CHECKED <i>Alice</i> 6-22-82 MECH ELEC MFG PROJECT
FINISH		SIZE CODE IDENT NO. DRAWING NO.		
NEXT ASSY USED ON		<b>800-0377</b>		
APPLICATION		SCALE NONE		
DO NOT SCALE DRAWING			SHEET 5 OF 5	REV A

800-0377 A

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A		RELEASED	12-16-80	CTC



NOTE: ALL RESISTANCE VALUES ARE IN OHMS, 1/2 W ± 5%.

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		CATTELL	12/11/80
NEXT ASSY USED ON		CHECKED	12-16-80
APPLICATION		JEFF PEASE	
DO NOT SCALE DRAWING		SCALE	NONE
G-80 POWER SUPPLY			REV H
SIZE CODE IDENT NO. DRAWING NO.			REV
D 800-0191			H
SCALE NONE			SHEET 3 OF 3

800-0191 H