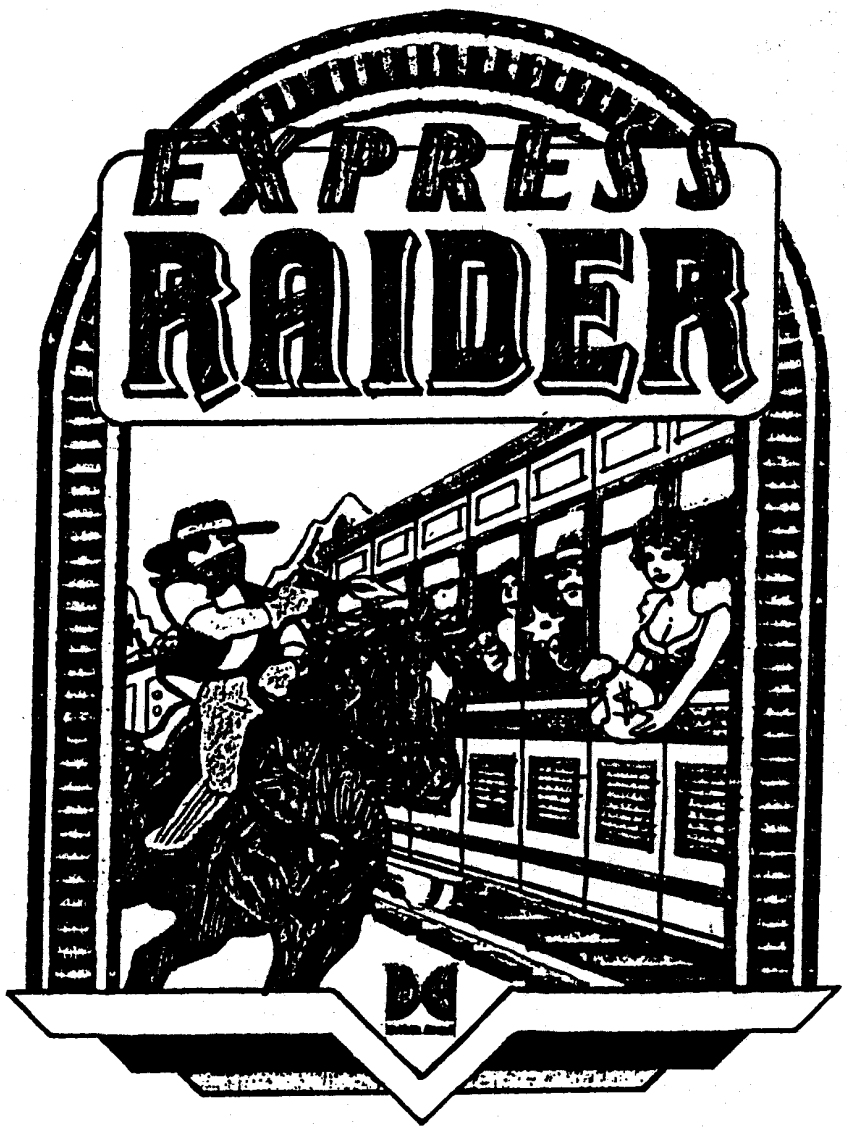
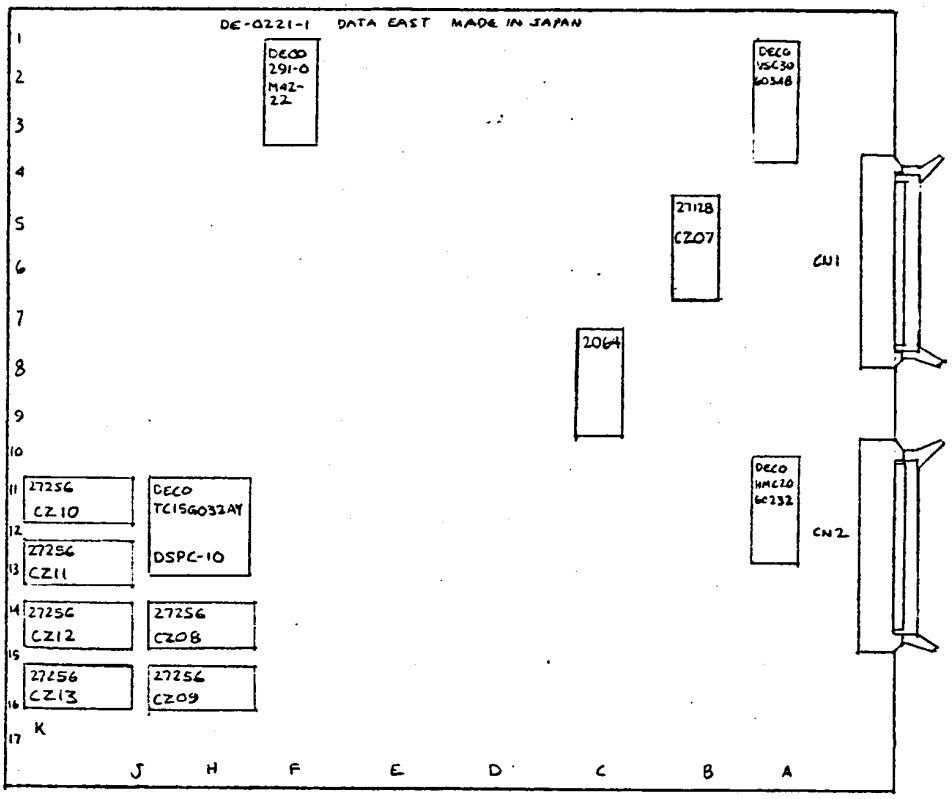
PCB SCHEMATICS

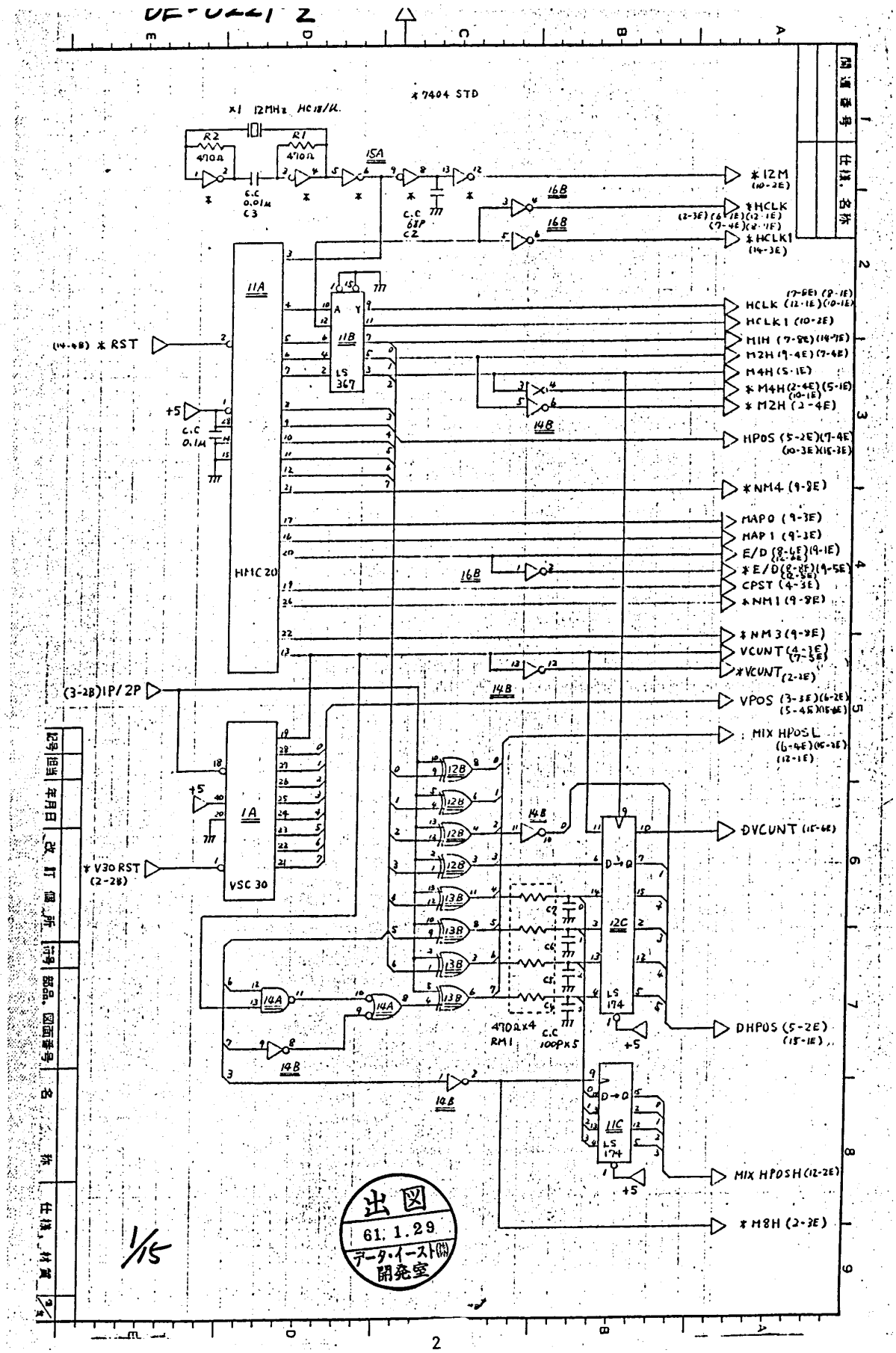


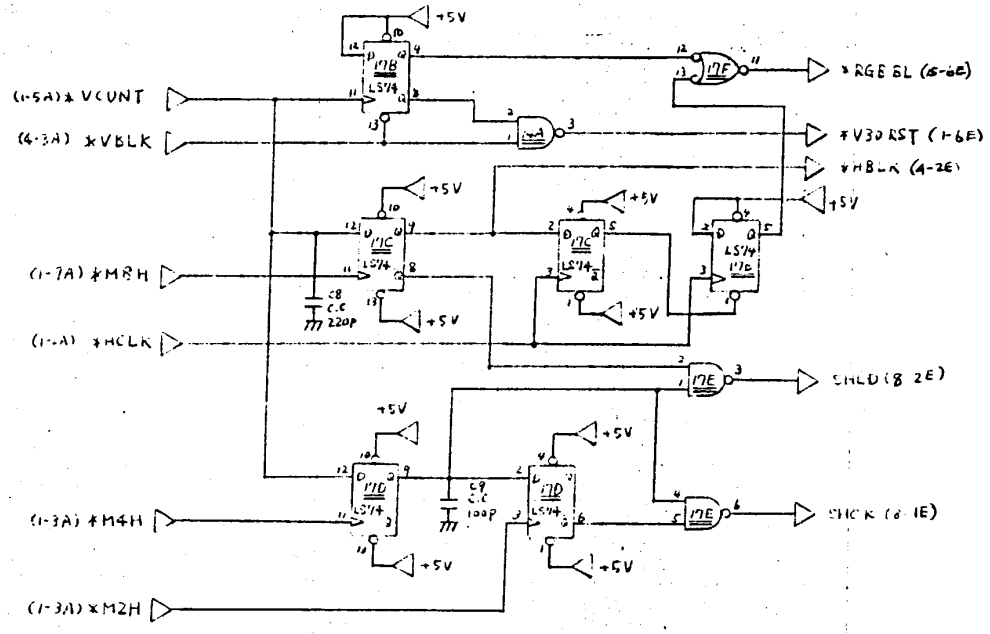
DATA EAST USA, INC.
470 Needles Drive
San Jose, CA 95112

780-0034-00

1. EXPRESS RAIDER BOTTOM PCB, DE-0221-1 (520-0069-00)



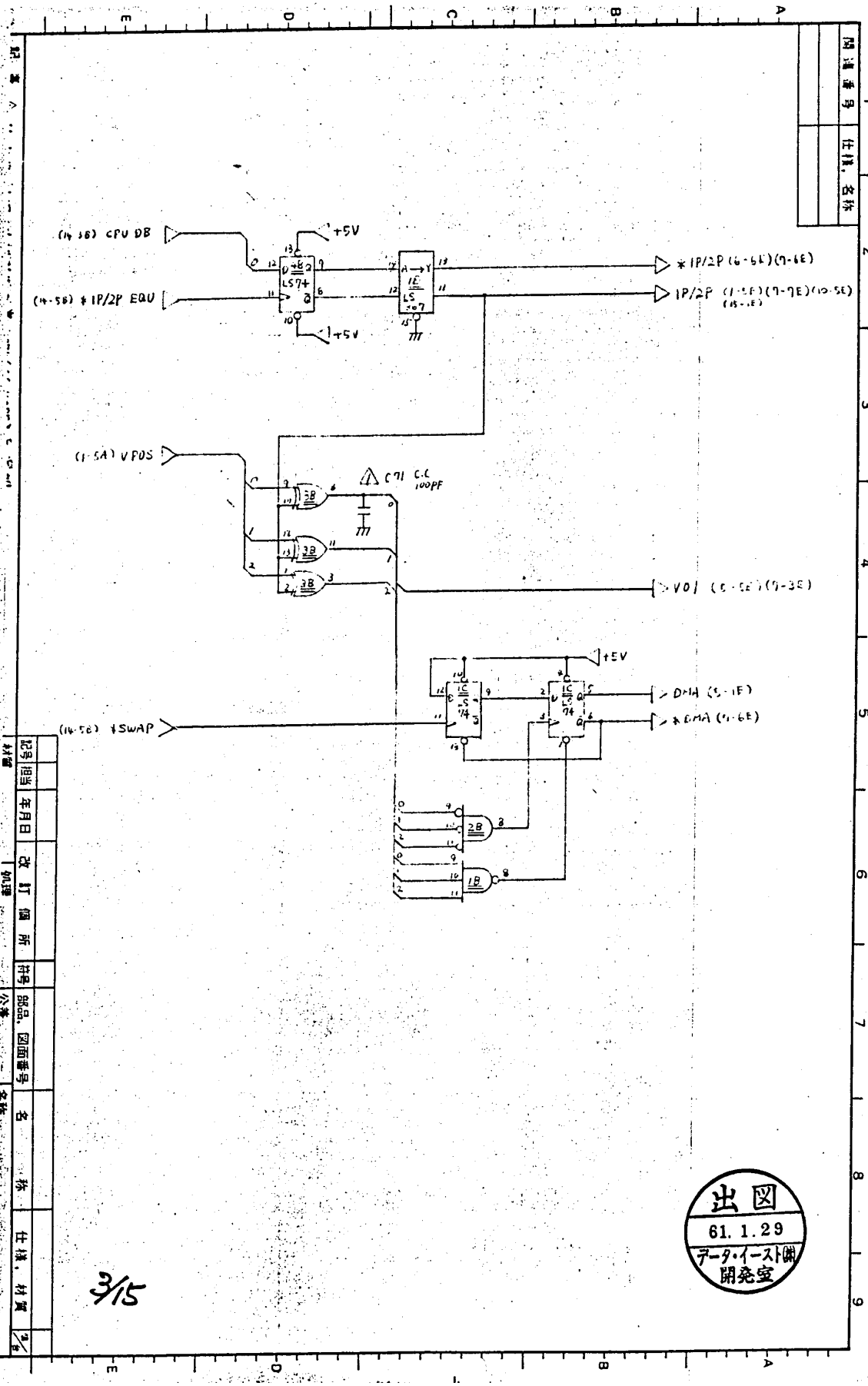

VF-U441 2
*7404 STD
X1 12MHz HC18/U
R2 470Ω
R1 470Ω
C.C 0.01μ C3
C.C 68P C2
15A
16B
14B
11A
HMC 20
11B
LS 367
1A
VSC 30
12B
13B
14A
12C
LS 174
11C
470Ω×4 RM1
C.C 100P×5
+5
C.C 0.1μ
*12M (10-2E)
*HCLK (2-3E)(6-1E)(12-1E)(7-4E)(8-1E)
*HCLK1 (14-3E)
HCLK (12-1E)(10-1E)
HCLK1 (10-2E)
M1H (7-5E)(14-1E)
M2H (9-4E)(7-4E)
M4H (5-1E)
*M4H (2-4E)(5-1E)(10-1E)
*M2H (2-4E)
HPOS (5-2E)(7-4E)(10-3E)(15-3E)
*NM4 (9-3E)
MAP0 (9-3E)
MAP1 (9-3E)
E/D (8-4E)(9-1E)(12-3E)
*E/D (8-4E)(9-5E)(12-3E)
CPST (4-3E)
*NM1 (9-3E)
*NM3 (9-3E)
VCUNT (4-1E)(7-5E)
*VCUNT (2-1E)
VPOS (3-3E)(6-2E)(5-4E)(15-4E)
MIX HPOSL (6-4E)(15-2E)(12-1E)
DVCUNT (15-6E)
DHPOS (5-2E)(15-1E)
MIX HPOSH (12-2E)
*M8H (2-3E)
(14-4B) *RST
(3-2B) 1P/2P
*V30 RST (2-2B)
出図
61. 1.29
データ・イースト㈱
開発室
1/15



記号	品名	年月日	改訂個所	付号	部品、図面番号	名称	仕様、材質	数量
材質			処理		公差			

2/15

出図
61. 1. 29
データ・イースト
開発


(14-5B) CPU DB
(14-5B) *1P/2P EQU
+5V
LS74
LS 307
*1P/2P (6-5E)(7-6E)
1P/2P (1-5E)(7-7E)(10-5E)
(1-5A) VPOS
C71 C.C 100PF
VD1 (5-5E)(7-3E)
(14-5B) *SWAP
DMA (5-1E)
*DMA (5-6E)
出図
61. 1.29
データ・イースト㈱
開発室
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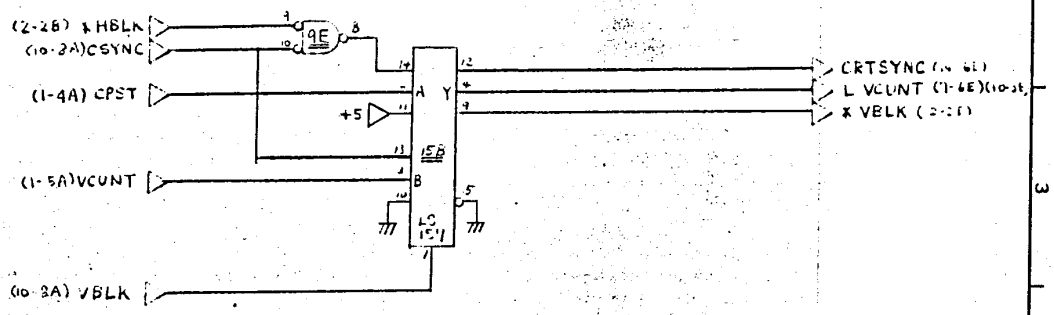

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出図
61. 1. 29
データ・イーストUSA
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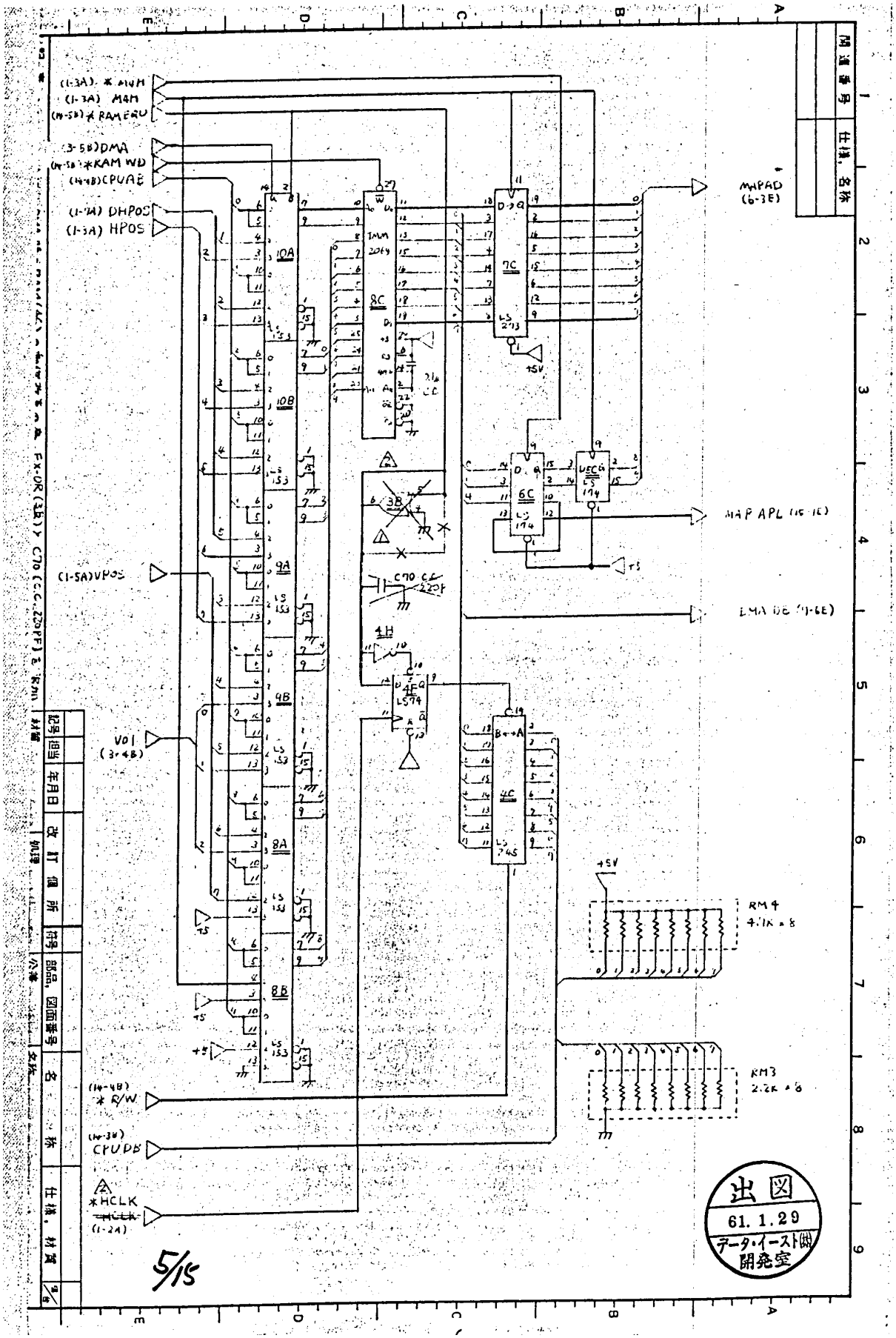
記号	品名	年月日	改訂個所	符号	部品, 図面番号	名称	仕様, 材質	3/8
材質		処理		公差		名称		


(1-3A) *MWM
(1-3A) MRM
(14-5B) *RAMERU
(3-5B) DMA
(14-5B) *KAM WD
(14-4B) CPUAE
(1-3A) DHPOS
(1-3A) HPOS
(1-5A) VPOS
VDI (3-4B)
(14-4B) *R/W
(14-3B) CPUDB
*HCLK (1-2A)
MAPAD (6-3E)
MAP APL (15-1E)
DMA DE (1-6E)
10A
10B
9A
9B
8A
8B
8C
7C
6C
4C
4E
3B
4H
C70 CC 220P
RM4 4.7K × 8
RM3 2.2K × 8
+5V
出図
61. 1. 29
データ・イースト開発室

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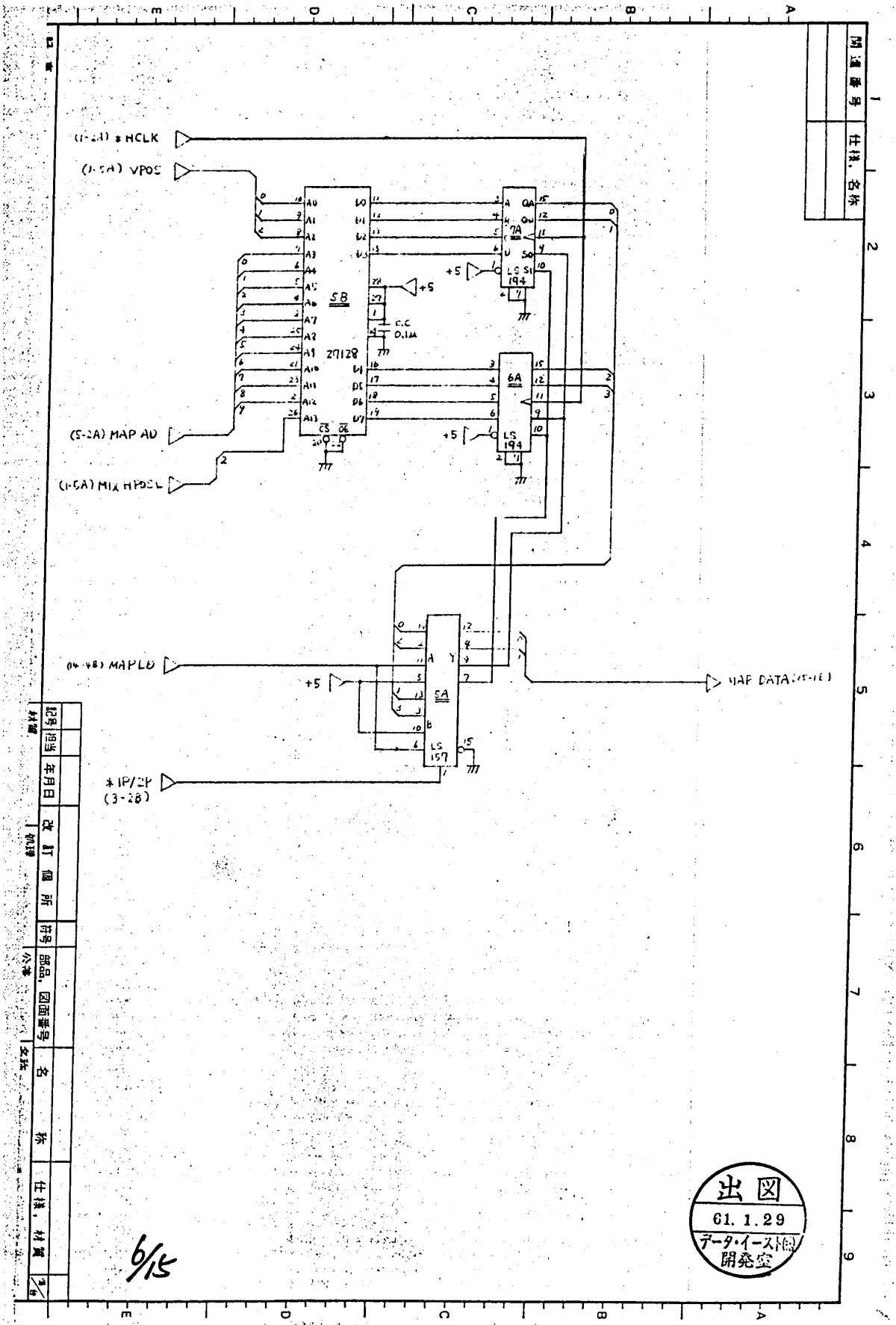
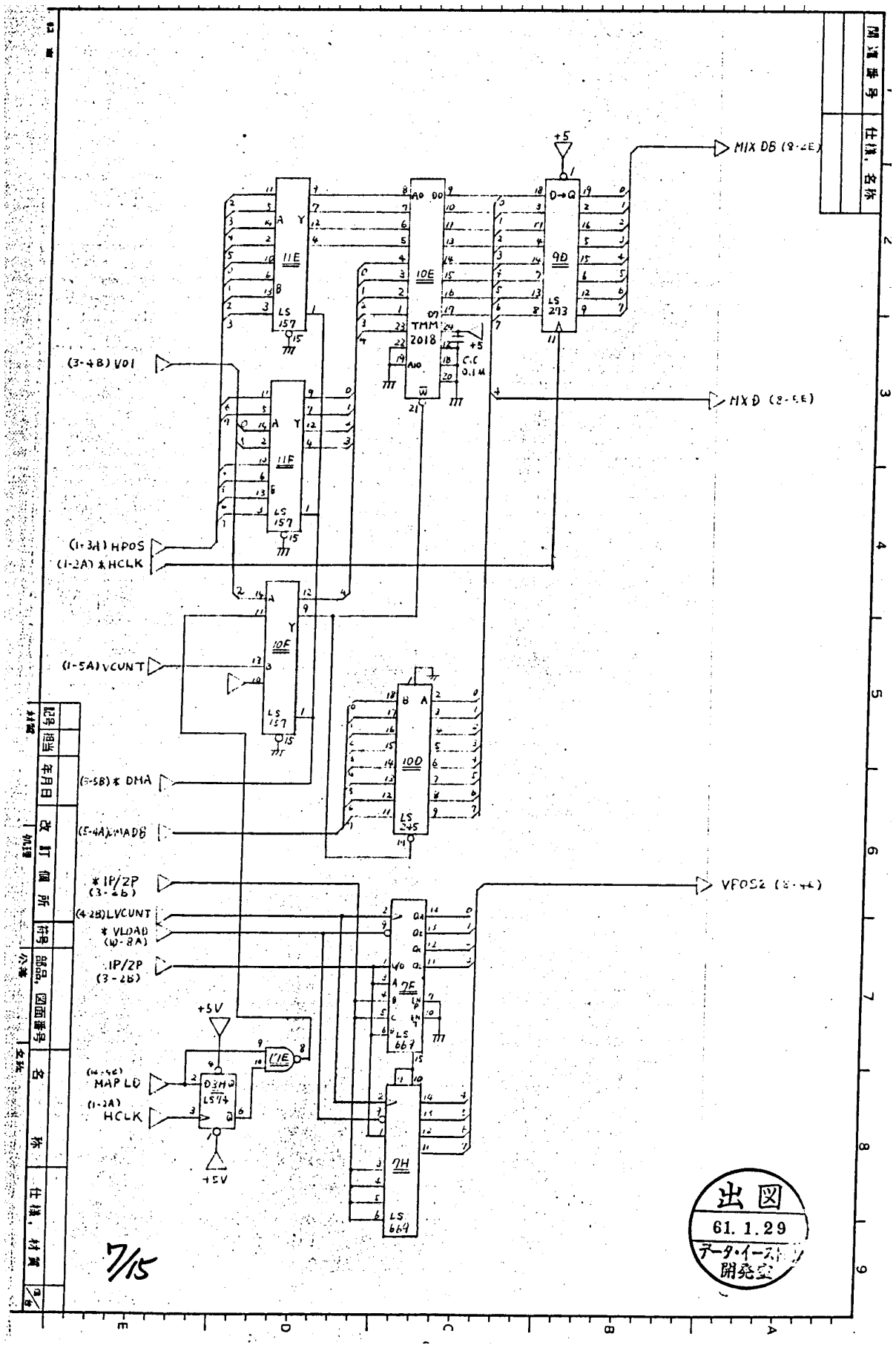

(1-2A) * HCLK
(1-5A) VPOS
(5-2A) MAP AD
(1-6A) MIX HPOS L
(04-4B) MAPLD
* IP/2P
(3-2B)
MAP DATA
5B
27128
7A
LS 194
6A
LS 194
5A
LS 157
+5
C.C
0.1M
出図
61. 1.29
データ・イースト㈱
開発室
6/15


MIX DB (8-2E)
MIX D (8-5E)
VFOS2 (8-4E)
(3-4B) V01
(1-3A) HPOS
(1-2A) *HCLK
(1-5A) VCUNT
(5-5B) * DMA
(5-4A) *MADB
*IP/ZP (3-2B)
(4-2B) LVCUNT
*VLOAD (W-8A)
IP/ZP (3-2B)
(14-4E) MAP LD
(1-2A) HCLK
+5V
11E
LS 157
11F
LS 157
10E
LS 157
10F
LS 157
10D
LS 245
9D
LS 273
TMM 2018
C.C 0.1μ
7E
LS 667
7H
LS 669
17E
D3M
LS174
7/15
出図
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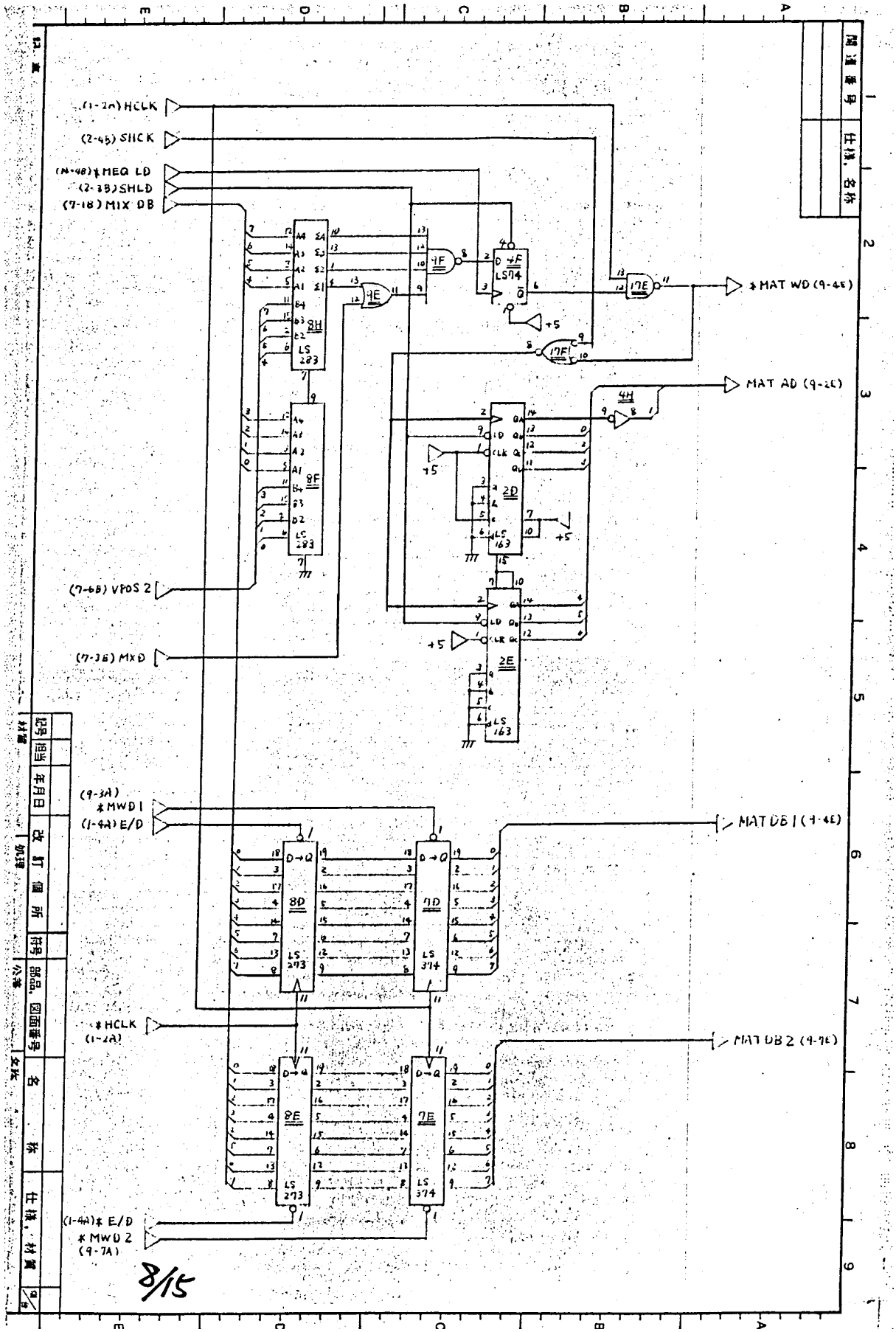
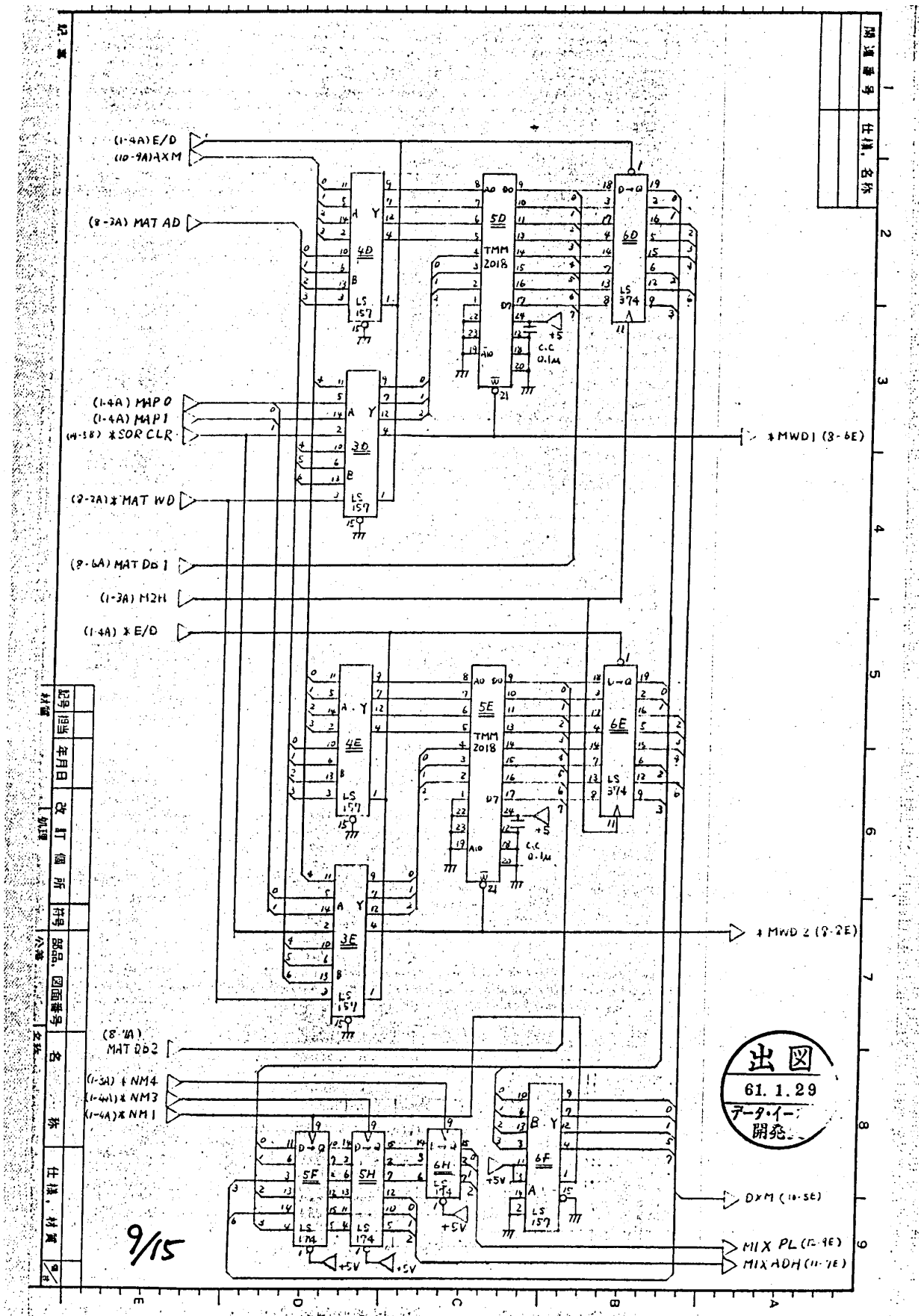

(1-2A) HCLK
(2-4B) SHCK
(N-4B) *MEQ LD
(2-3B) SHLD
(7-1B) MIX DB
(7-6B) VPOS 2
(7-3B) MXD
*MAT WD (9-4E)
MAT AD (9-2E)
(9-3A) *MWD 1
(1-4A) E/D
MAT DB 1 (9-4E)
*HCLK (1-2A)
MAT DB 2 (9-7E)
(1-4A) * E/D
*MWD 2 (9-7A)
8/15


(1-4A) E/D
(10-9A) AXM
(8-3A) MAT AD
(1-4A) MAP 0
(1-4A) MAP 1
(14-5B) *SOR CLR
(8-2A) *MAT WD
(8-6A) MAT DB 1
(1-3A) M2H
(1-4A) *E/D
(8-4A) MAT DB2
(1-3A) *NM4
(1-4A) *NM3
(1-4A) *NM1
*MWD1 (8-6E)
*MWD2 (8-2E)
DXM (10-5E)
MIX PL (12-9E)
MIX ADH (11-7E)
4D
5D
6D
3D
4E
5E
6E
3E
5F
5H
6H
6F
LS 157
LS 374
LS 174
TMM 2018
C.C 0.1μ
+5V
9/15
出図
61. 1. 29
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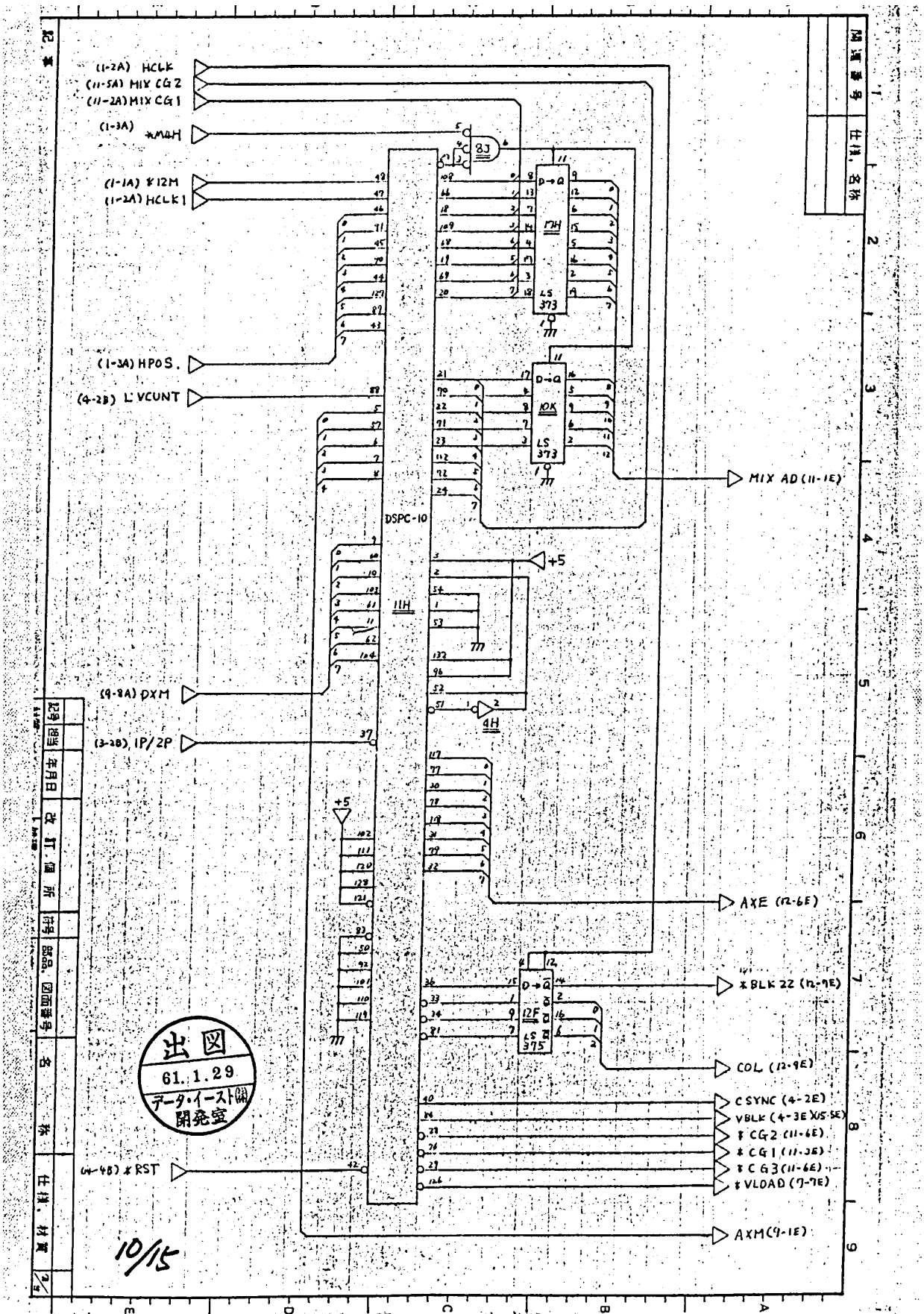
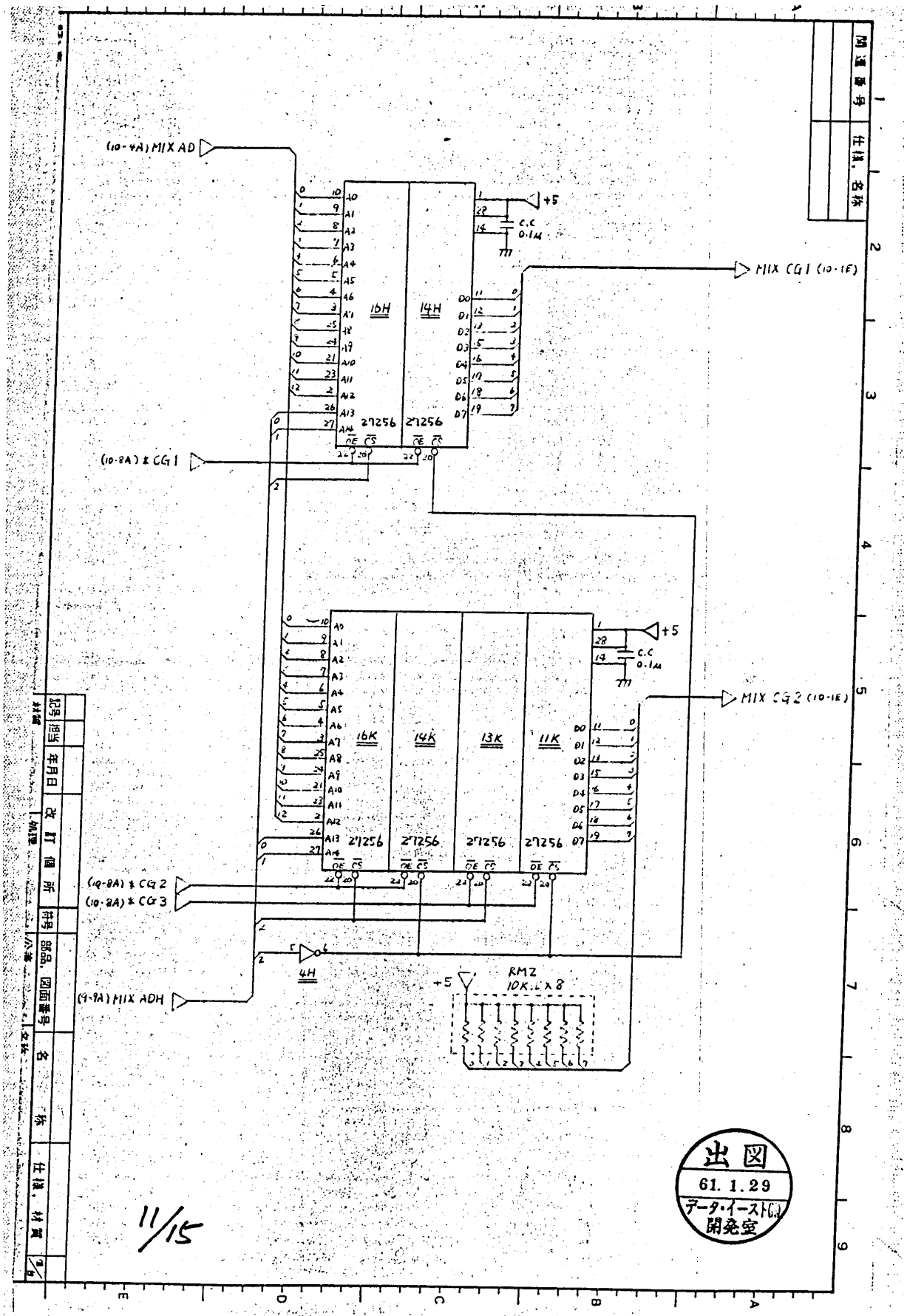
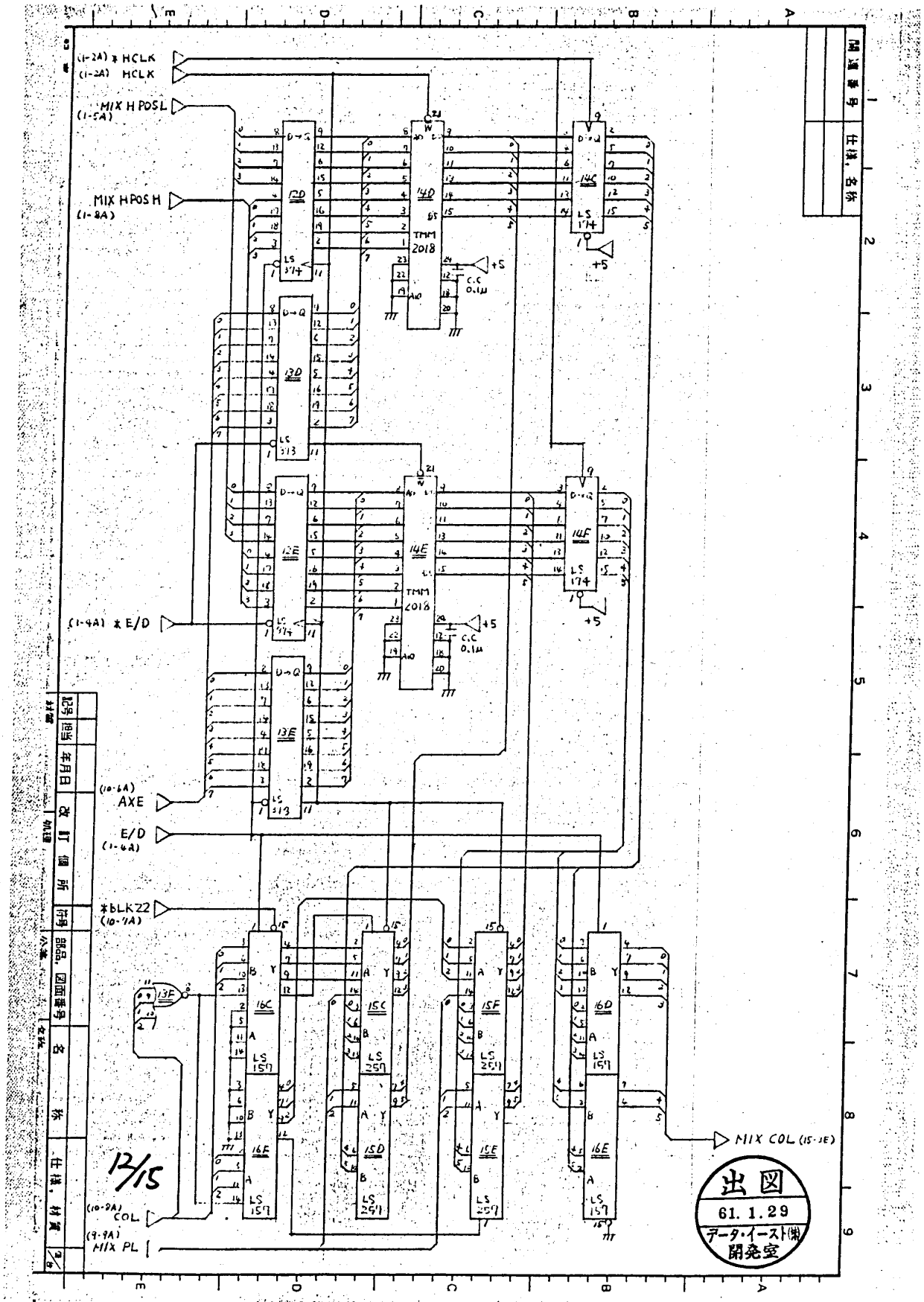
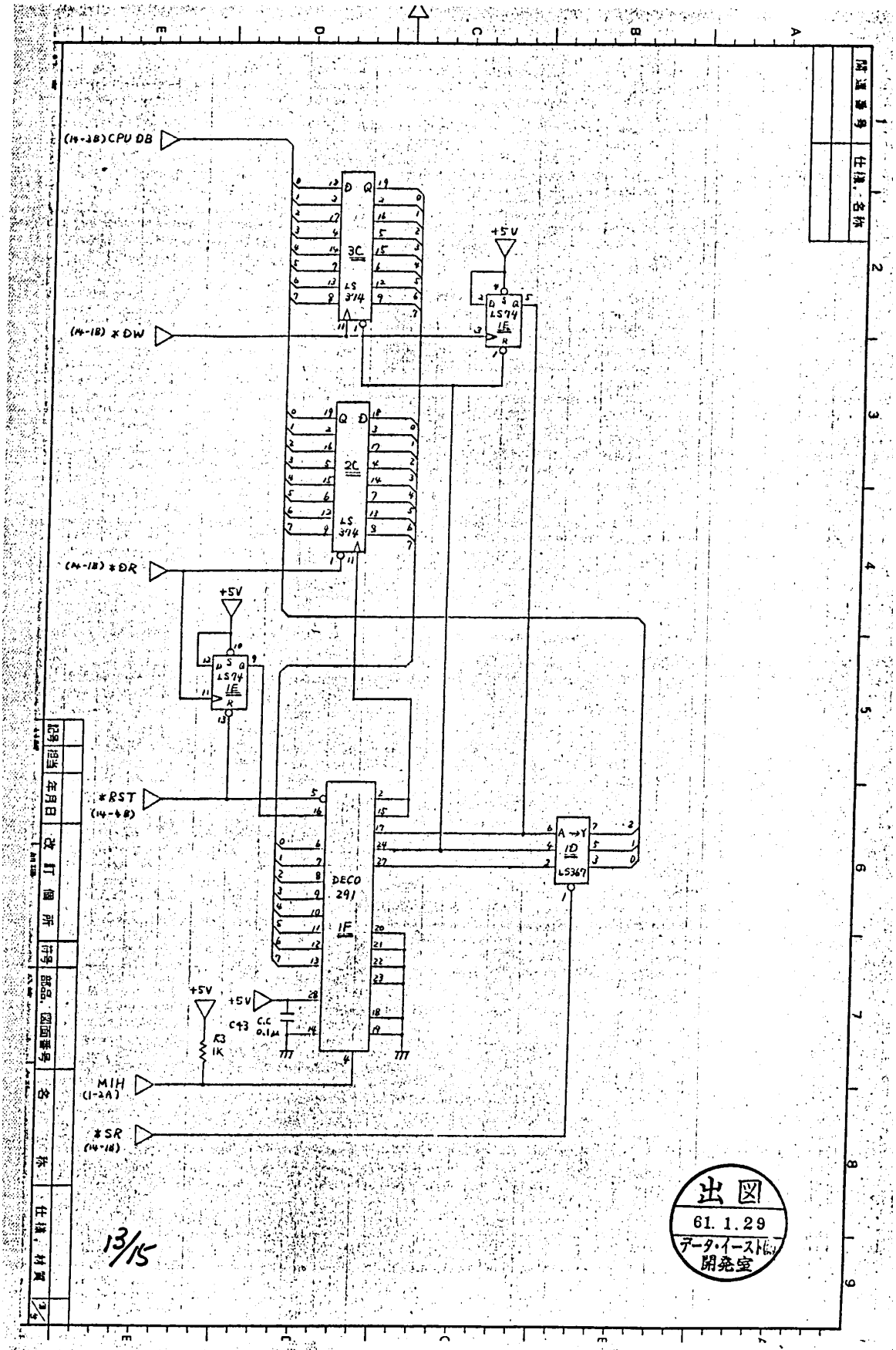

(1-2A) HCLK
(11-5A) MIX CG2
(11-2A) MIX CG1
(1-3A) *MWH
(1-1A) *12M
(1-2A) HCLK1
(1-3A) HPOS.
(4-2B) L'VCUNT
(9-8A) DXM
(3-2B) 1P/2P
(4-4B) *RST
DSPC-10
MIX AD (11-1E)
AXE (12-6E)
*BLK 2Z (12-9E)
COL (12-9E)
CSYNC (4-2E)
VBLK (4-3E)(15-5E)
*CG2 (11-6E)
*CG1 (11-3E)
*CG3 (11-6E)
*VLOAD (9-7E)
AXM (9-1E)
+5
出図
61.1.29
データ・イースト㈱
開発室
10/15


(10-4A) MIX AD
(10-8A) * CG1
(10-8A) * CG2
(10-2A) * CG3
(9-9A) MIX ADH
MIX CG1 (10-1E)
MIX CG2 (10-1E)
16H
14H
16K
14K
13K
11K
27256
+5
C.C 0.1μ
4H
RM2 10KΩ×8
出図
61. 1.29
データ・イーストCo.
開発室
11/15


(1-2A) *HCLK
(1-2A) HCLK
MIX H POSL
(1-5A)
MIX H POS H
(1-8A)
(1-4A) *E/D
(10-6A)
AXE
E/D
(1-6A)
*BLKZ2
(10-7A)
(10-9A)
COL
(9-9A)
MIX PL
MIX COL (15-1E)
TMM 2018
LS 374
LS 313
LS 174
LS 157
LS 259
C.C 0.1μ
+5
13/15
出図
61. 1.29
データ・イースト㈱
開発室


(14-2B) CPU DB
(14-1B) *DW
(14-1B) *DR
*RST
(14-4B)
MIH
(1-2A)
*SR
(14-1A)
3C
LS 374
2C
LS 374
LS74
1E
DECO 291
1F
LS367
1D
+5V
R3
1K
C43
C.C
0.1μ
13/15
出図
61. 1. 29
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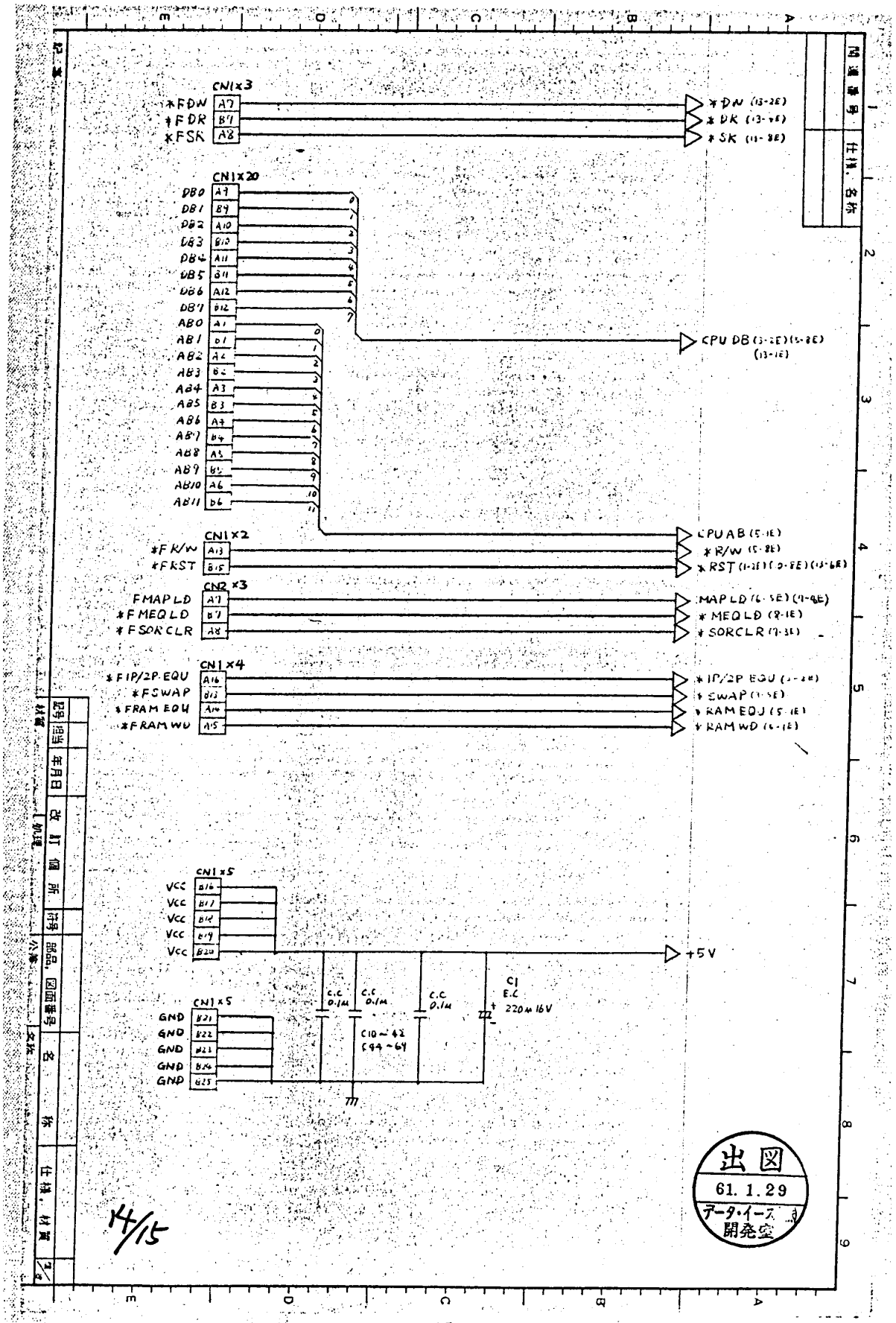
CN1×3
*FDW A7
*FDR B7
*FSK A8
*DW (13-2E)
*DR (13-4E)
*SK (11-8E)
CN1×20
DB0 A9
DB1 B9
DB2 A10
DB3 B10
DB4 A11
DB5 B11
DB6 A12
DB7 B12
AB0 A1
AB1 B1
AB2 A2
AB3 B2
AB4 A3
AB5 B3
AB6 A4
AB7 B4
AB8 A5
AB9 B5
AB10 A6
AB11 B6
CPU DB (3-2E)(5-8E)
(13-1E)
CN1×2
*FR/W A13
*FRST B15
CPU AB (5-1E)
*R/W (5-8E)
*RST (1-3E)(3-5E)(13-6E)
CN2×3
FMAPLD A7
*FMEQLD B7
*FSORCLR A8
MAPLD (6-5E)(7-4E)
*MEQLD (8-1E)
*SORCLR (7-3E)
CN1×4
*FIP/2P·EQU A16
*FSWAP B13
*FRAMEQU A14
*FRAMWD A15
*IP/2P EQU
*SWAP (1-5E)
*RAMEQU (5-1E)
*RAMWD (6-1E)
CN1×5
VCC B16
VCC B17
VCC B18
VCC B19
VCC B20
+5V
CN1×5
GND B21
GND B22
GND B23
GND B24
GND B25
C.C 0.1μ
C.C 0.1μ
C.C 0.1μ
C10～42
C44～64
C1
E.C
220μ 16V
出図
61. 1. 29
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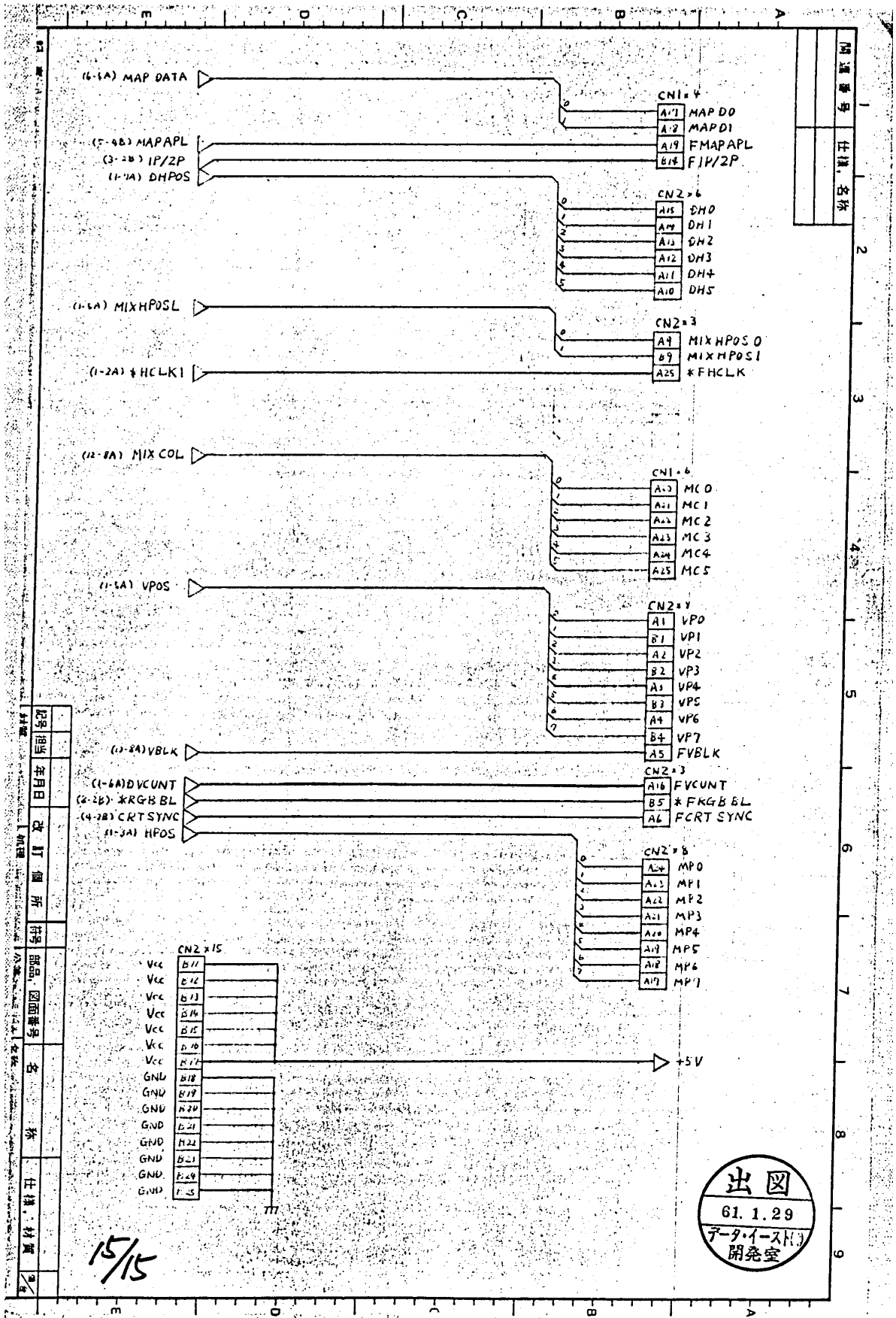
14/15


(6-6A) MAP DATA
CN1×4
A17 MAP D0
A18 MAP D1
(5-4B) MAPAPL
(3-2B) IP/2P
(1-1A) DHPOS
A19 FMAPAPL
B14 FIP/2P
CN2×6
A15 DH0
A14 DH1
A13 DH2
A12 DH3
A11 DH4
A10 DH5
(1-6A) MIXHPOSL
CN2×3
A9 MIXHPOS0
B9 MIXHPOS1
(1-2A) *HCLK1
A25 *FHCLK
(12-8A) MIX COL
CN1×6
A20 MC0
A21 MC1
A22 MC2
A23 MC3
A24 MC4
A25 MC5
(1-5A) VPOS
CN2×8
A1 VP0
B1 VP1
A2 VP2
B2 VP3
A3 VP4
B3 VP5
A4 VP6
B4 VP7
(13-8A) VBLK
A5 FVBLK
(1-6A) DVCUNT
(2-2B) *RGB BL
(4-2B) CRT SYNC
(1-3A) HPOS
CN2×3
A16 FVCUNT
B5 *FRGB BL
A6 FCRT SYNC
CN2×8
A24 MP0
A23 MP1
A22 MP2
A21 MP3
A20 MP4
A19 MP5
A18 MP6
A17 MP7
CN2×15
Vcc B11
Vcc B12
Vcc B13
Vcc B14
Vcc B15
Vcc B16
Vcc A11
GND B18
GND B19
GND A20
GND B21
GND A22
GND B23
GND B24
GND A25
+5V
15/15
出図
61. 1.29
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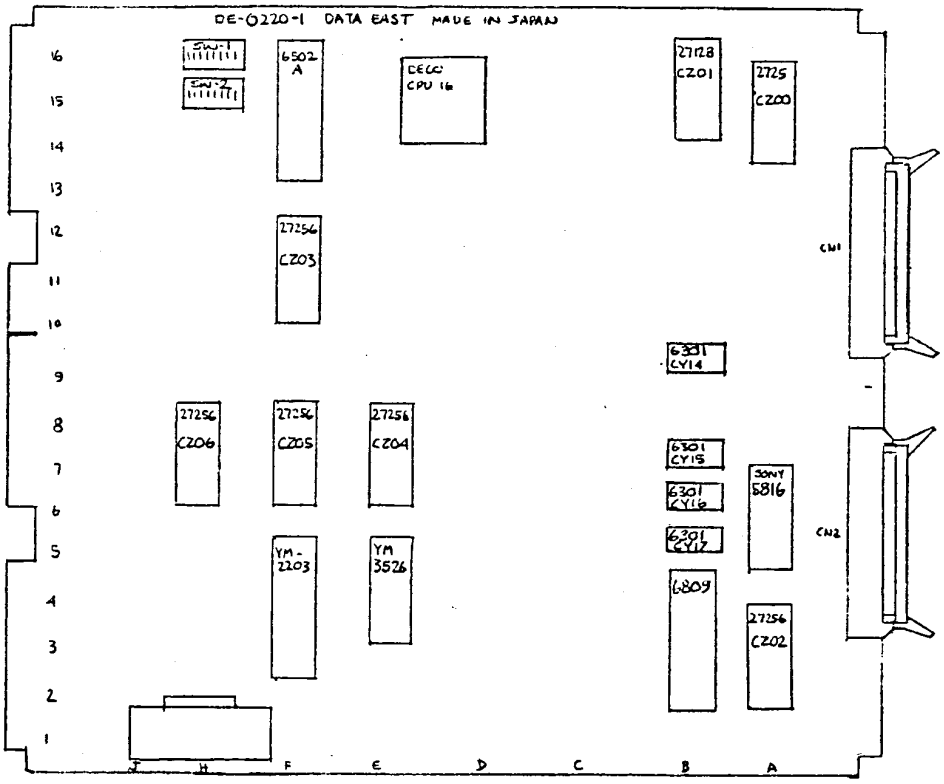
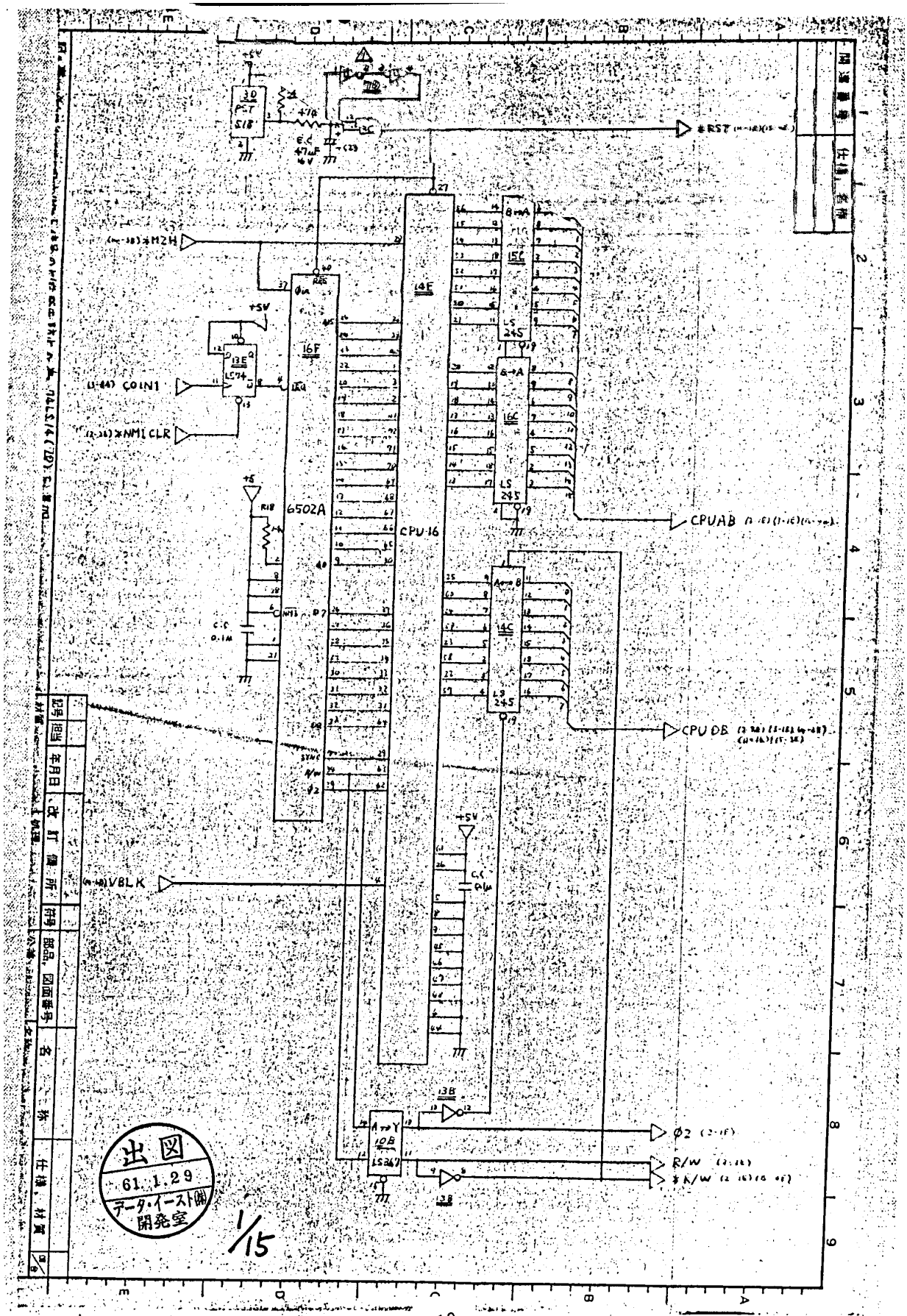
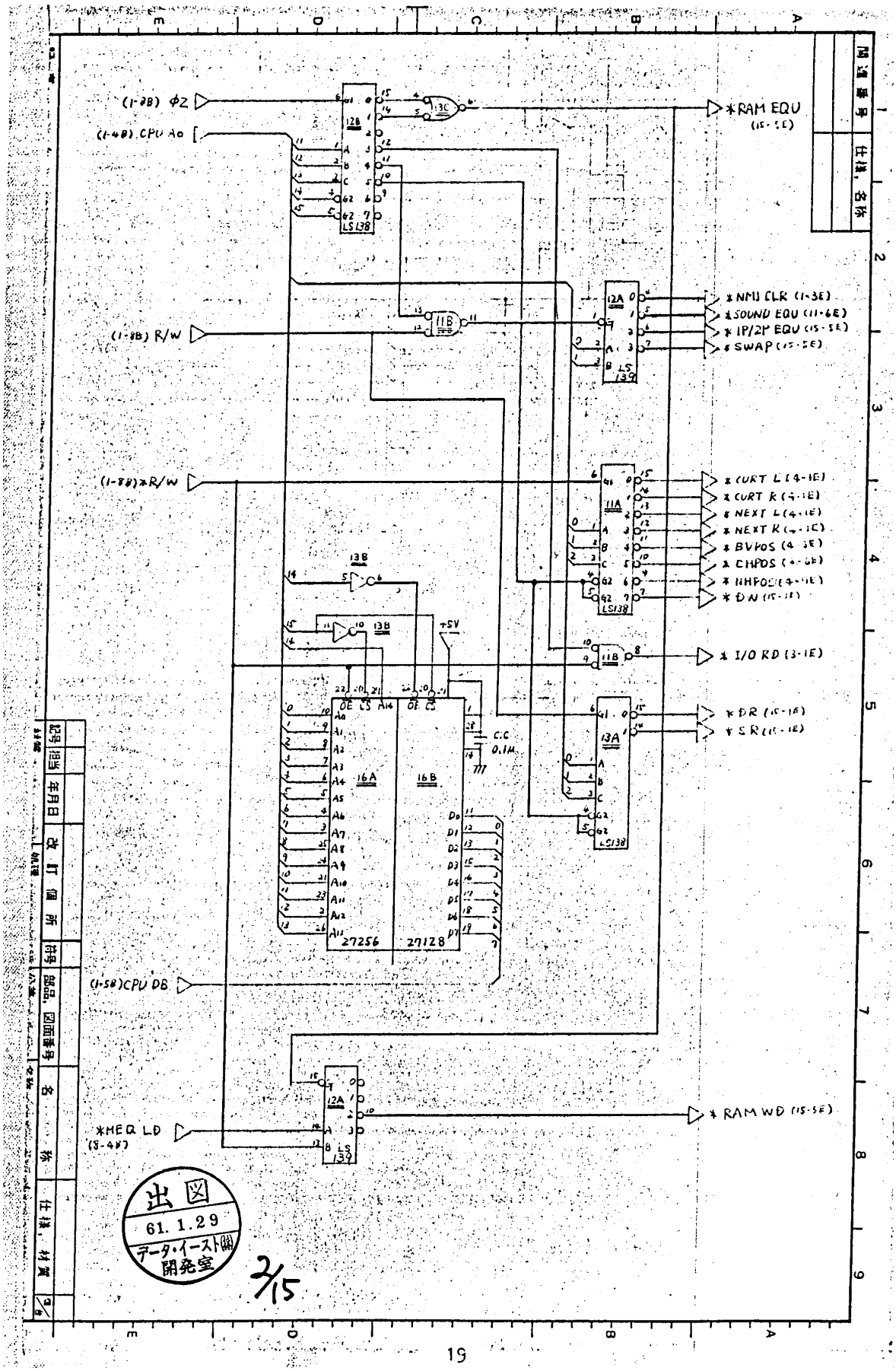
2. EXPRESS RAIDER TOP PCB, DE-0221-1 (520-0068-~)




*RST
*M2H
COIN1
*NMI CLR
6502A
CPU-16
14F
16F
8→A
16C
LS 245
A→B
14C
CPUAB
CPUDB
VBLK
A→Y
10B
LS367
13B
φ2
R/W
*R/W
出図
61.1.29
データ・イースト(株)
開発室
1/15


(1-2B) φ2
(1-4B) CPU A0
(1-4B) R/W
(1-8B) *R/W
(1-5B) CPU DB
*HEQ LD (5-4F)
*RAM EQU (15-5E)
*NMI CLR (1-3E)
*SOUND EQU (11-6E)
*1P/2P EQU (15-5E)
*SWAP (15-5E)
*CURT L (4-1E)
*CURT R (4-1E)
*NEXT L (4-1E)
*NEXT R (4-1E)
*BVPOS (4-5E)
*CHPOS (4-6E)
*HHPOS (4-1E)
*DN (15-1E)
*I/O RD (3-1E)
*DR (15-1E)
*SR (15-1E)
*RAM WD (15-5E)
+5V
C.C 0.1μ
27256
27128
LS138
LS139
出図
61. 1.29
データ・イースト㈱
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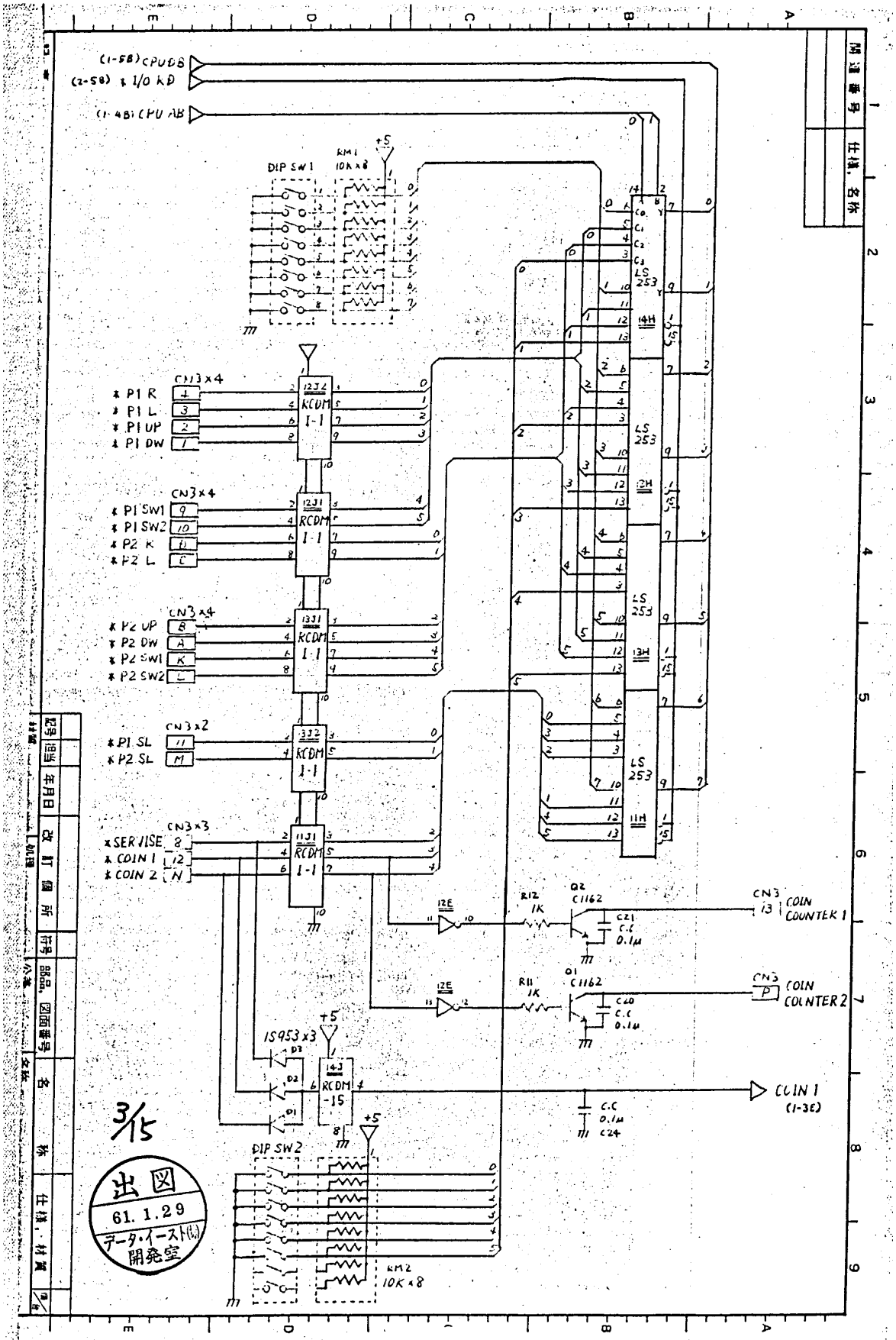
2/15


(1-5B) CPU DB
(2-5B) * I/O RD
(1-4B) CPU AB
DIP SW1
RM1 10K×8
+5
CN3×4
* P1 R
* P1 L
* P1 UP
* P1 DW
12J4 RCDM 1-1
CN3×4
* P1 SW1
* P1 SW2
* P2 K
* P2 L
12J1 RCDM 1-1
CN3×4
* P2 UP
* P2 DW
* P2 SW1
* P2 SW2
13J1 RCDM 1-1
CN3×2
* P1 SL
* P2 SL
13J2 RCDM 1-1
CN3×3
* SERVISE
* COIN 1
* COIN 2
11J1 RCDM 1-1
LS 253
14H
12H
13H
11H
12E
R12 1K
Q2 C1162
C21 C.C 0.1μ
CN3 13 COIN COUNTER 1
R11 1K
Q1 C1162
C40 C.C 0.1μ
CN3 P COIN COUNTER 2
1S953×3
14J RCDM -15
COIN 1 (1-3E)
C.C 0.1μ C24
DIP SW2
RM2 10K×8
3/15
出図
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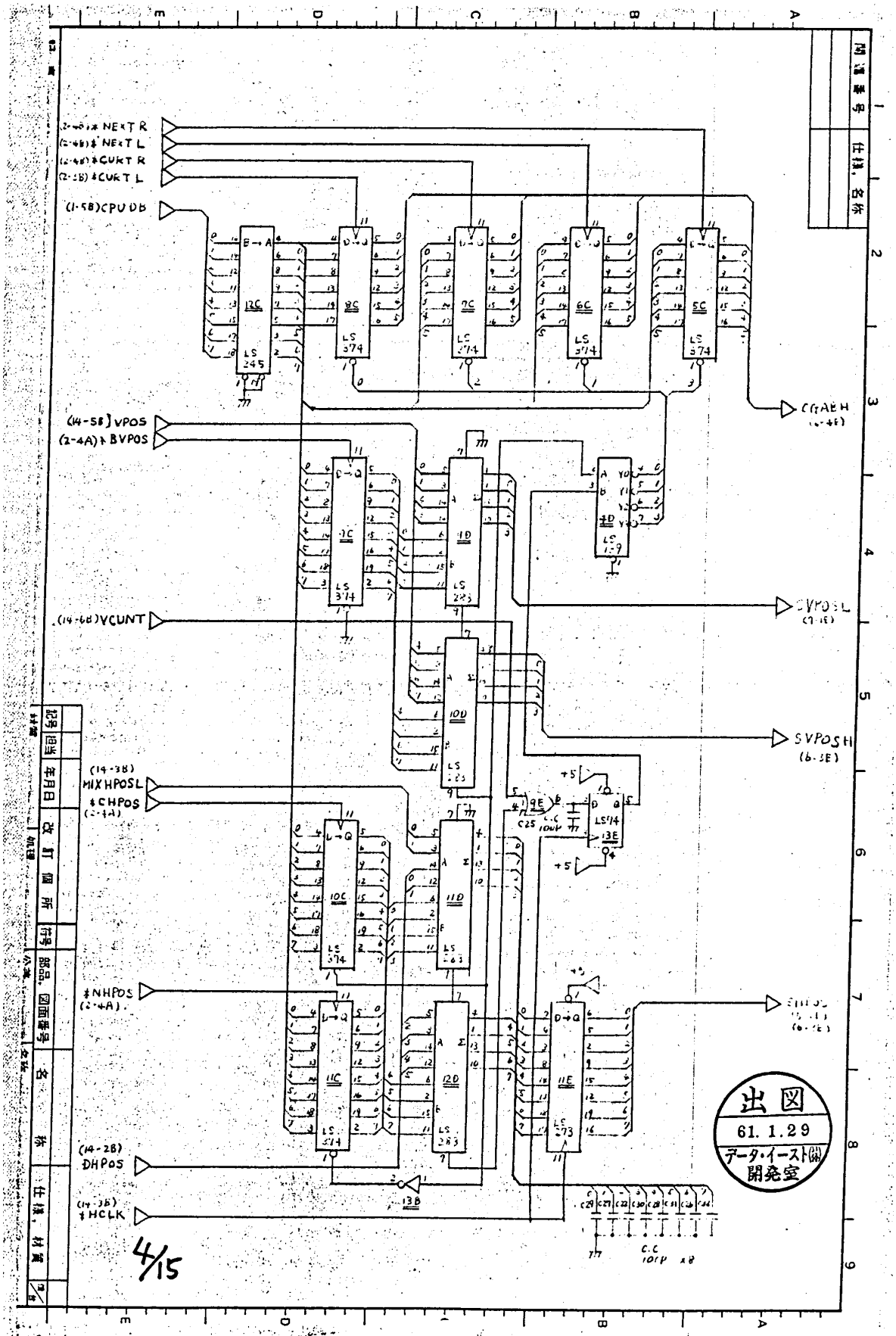
(2-4B)*NEXT R
(2-4B)*NEXT L
(2-4B)*CURT R
(2-5B)*CURT L
(1-5B)CPU DB
(14-5B)VPOS
(2-4A)*BVPOS
(14-6B)VCUNT
(14-3B)
MIXHPOSL
*CHPOS
(2-4A)
*NHPOS
(2-4A)
(14-2B)
DHPOS
(14-3B)
*HCLK
SVPOSL
SVPOSH
+5
C25
C.C
10uF
LS 245
LS 374
LS 283
LS 173
LS 139
LS 14
出図
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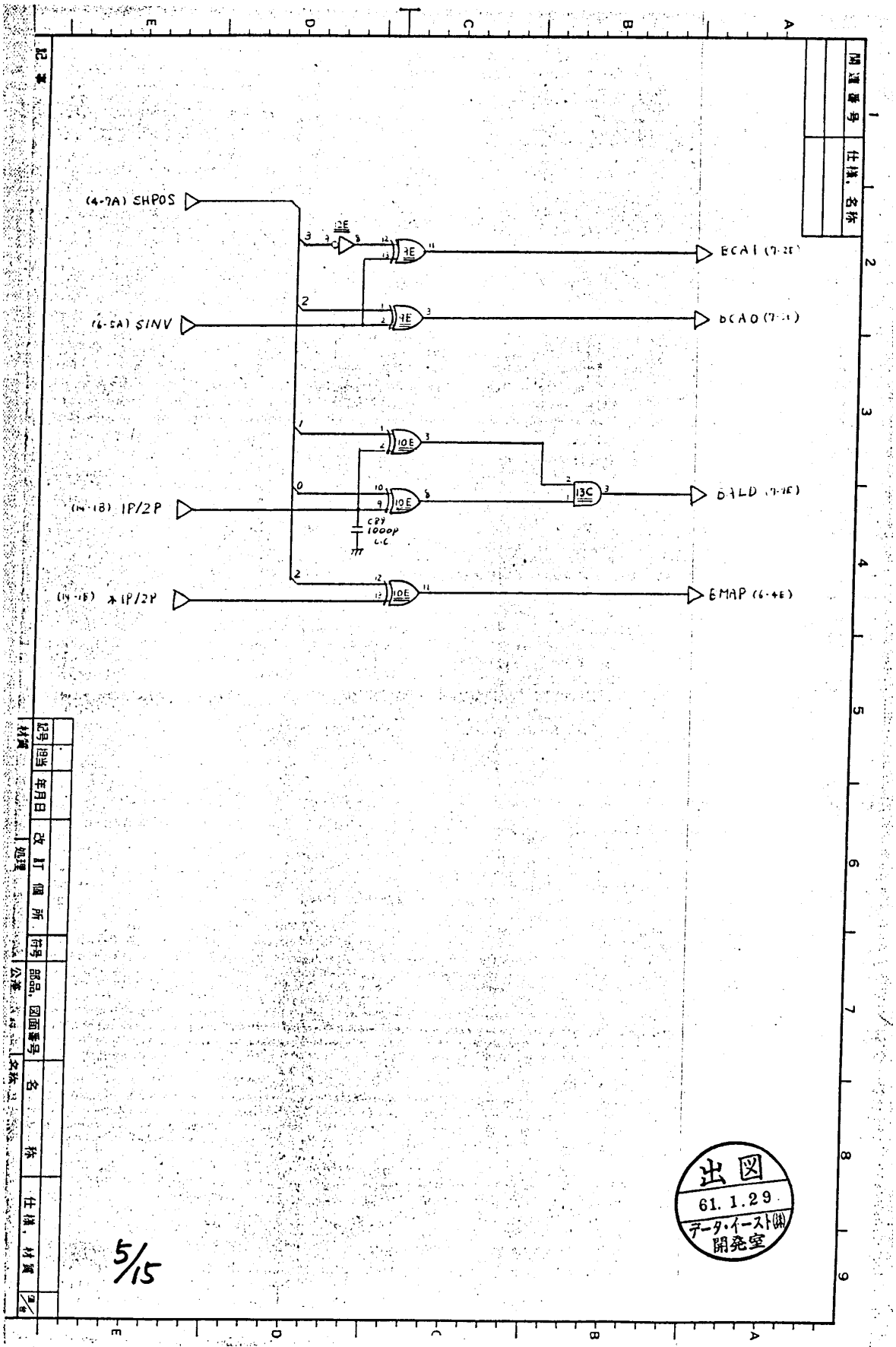
(4-7A) SHPOS
(6-5A) SINV
(14-1B) 1P/2P
(14-1B) *1P/2P
12E
3E
9E
10E
10E
10E
13C
C89
1000P
ECAI (7-2E)
DCAO (7-1)
DALD (7-1E)
EMAP (6-4E)
出図
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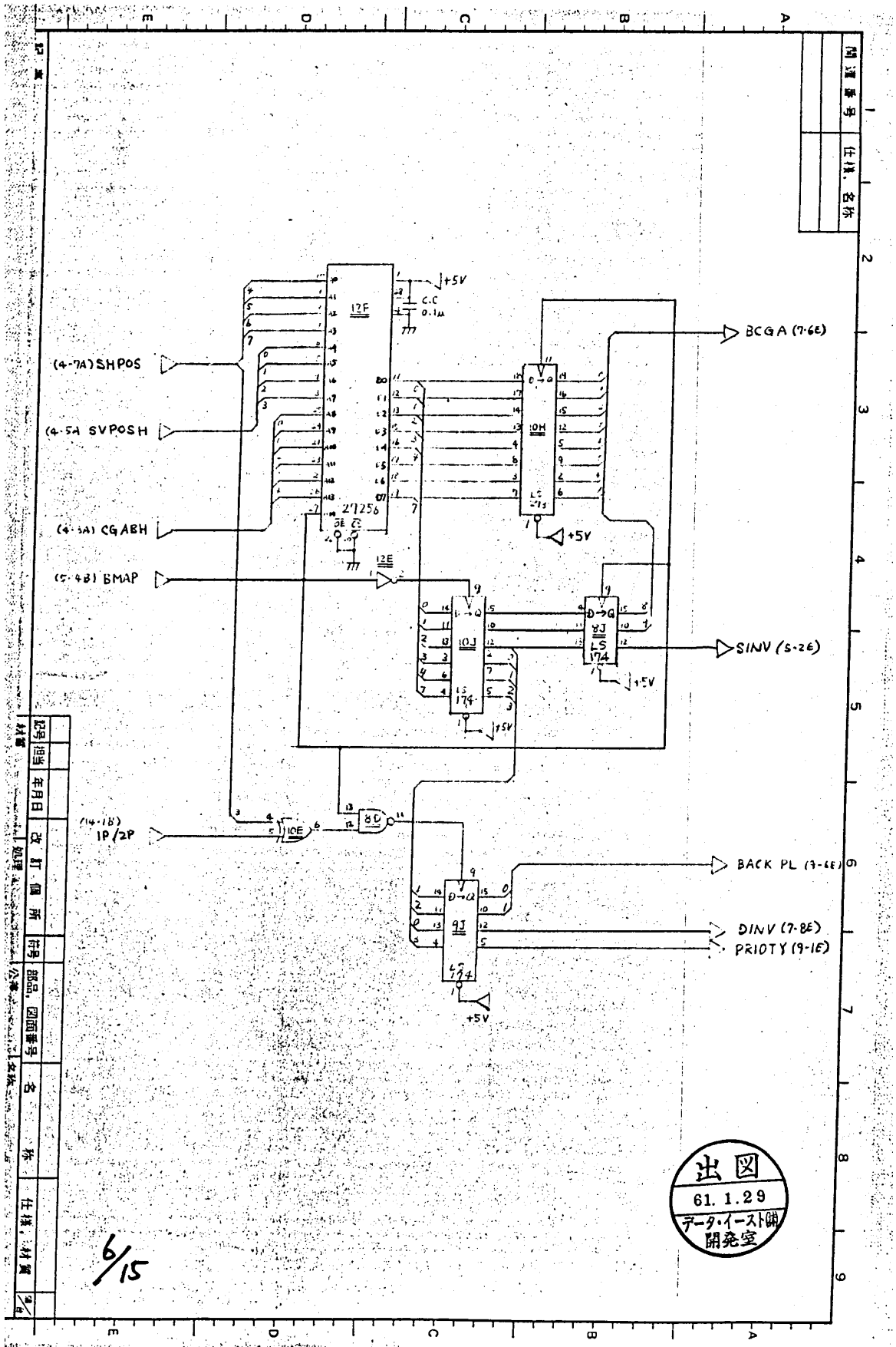
(4-7A) SHPOS
(4-5A SVPOSH
(4-5A) CGABH
(5-4B) BMAP
(14-1B) 1P/2P
+5V
C.C 0.1μ
17F
2716
12E
10H
10J
9J
10E
8D
LS 174
BCGA (7-6E)
SINV (5-2E)
BACK PL (3-6E)
DINV (7-8E)
PRIDTY (9-1E)
出図
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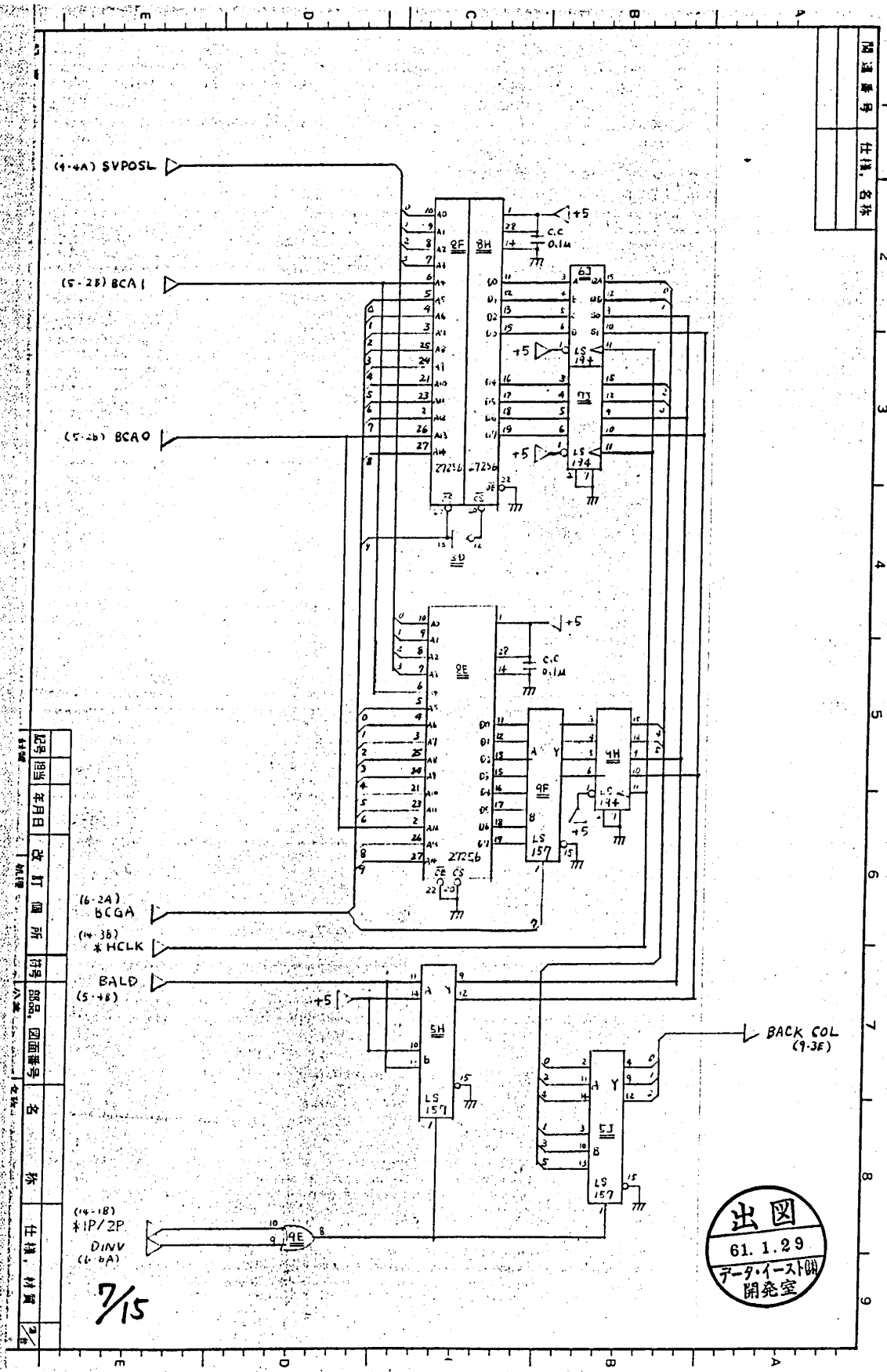
(4-4A) SVPOSL
(5-2B) BCA1
(5-2b) BCA0
(6-2A) BCGA
(14-3b) *HCLK
BALD (5-4B)
BACK COL (9-3E)
(14-1B) *IP/2P
DINV (6-6A)
+5
C.C 0.1μ
27256
LS 174
LS 157
LS 139
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出図
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データ・イースト研
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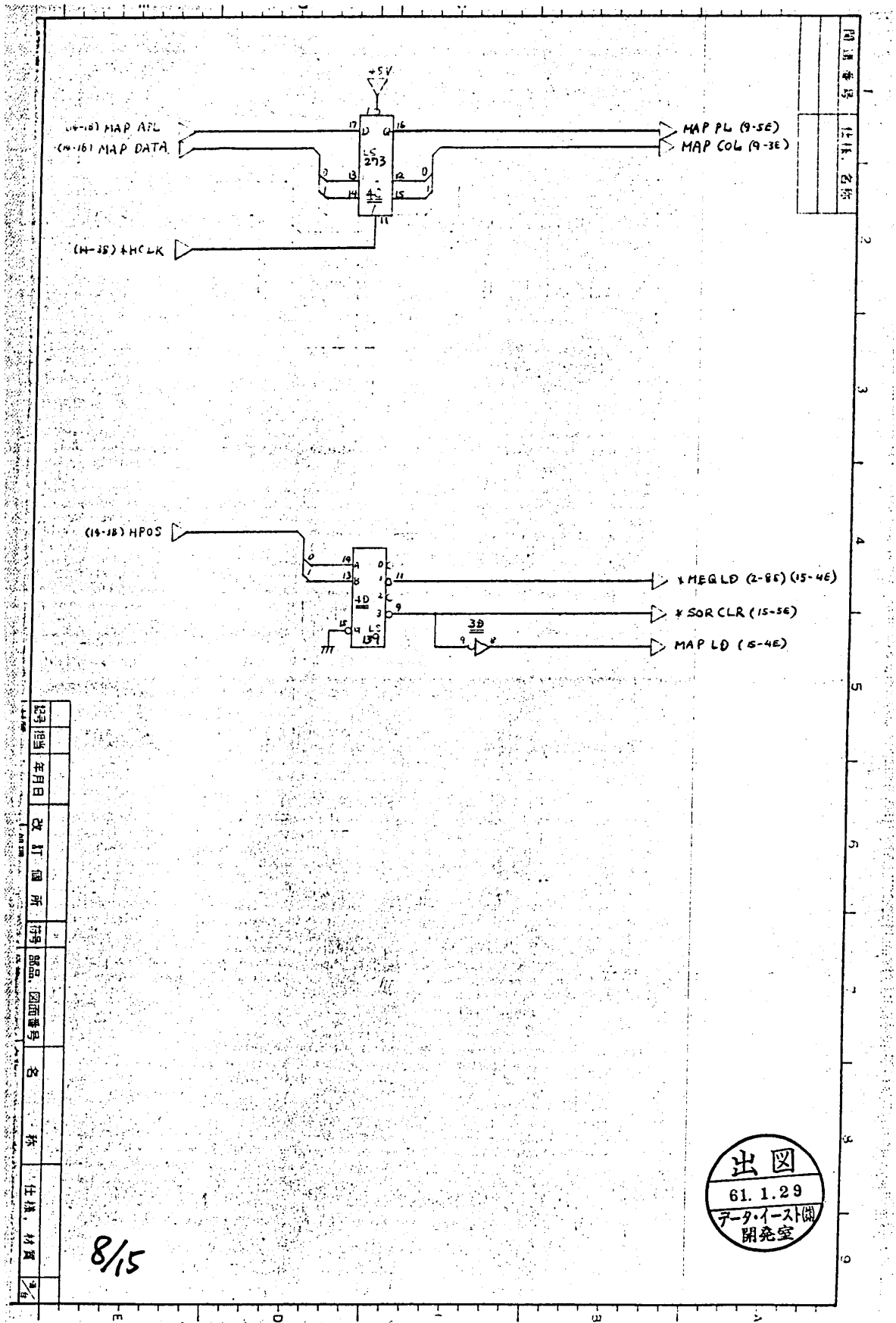
+5V
(14-16) MAP ADL
(14-16) MAP DATA
LS 293
MAP PL (9-5E)
MAP COL (9-3E)
(14-3B) *HCLK
(14-1B) HPOS
LS 139
*MEQLD (2-8E) (15-4E)
*SORCLR (15-5E)
MAP LD (5-4E)
出図
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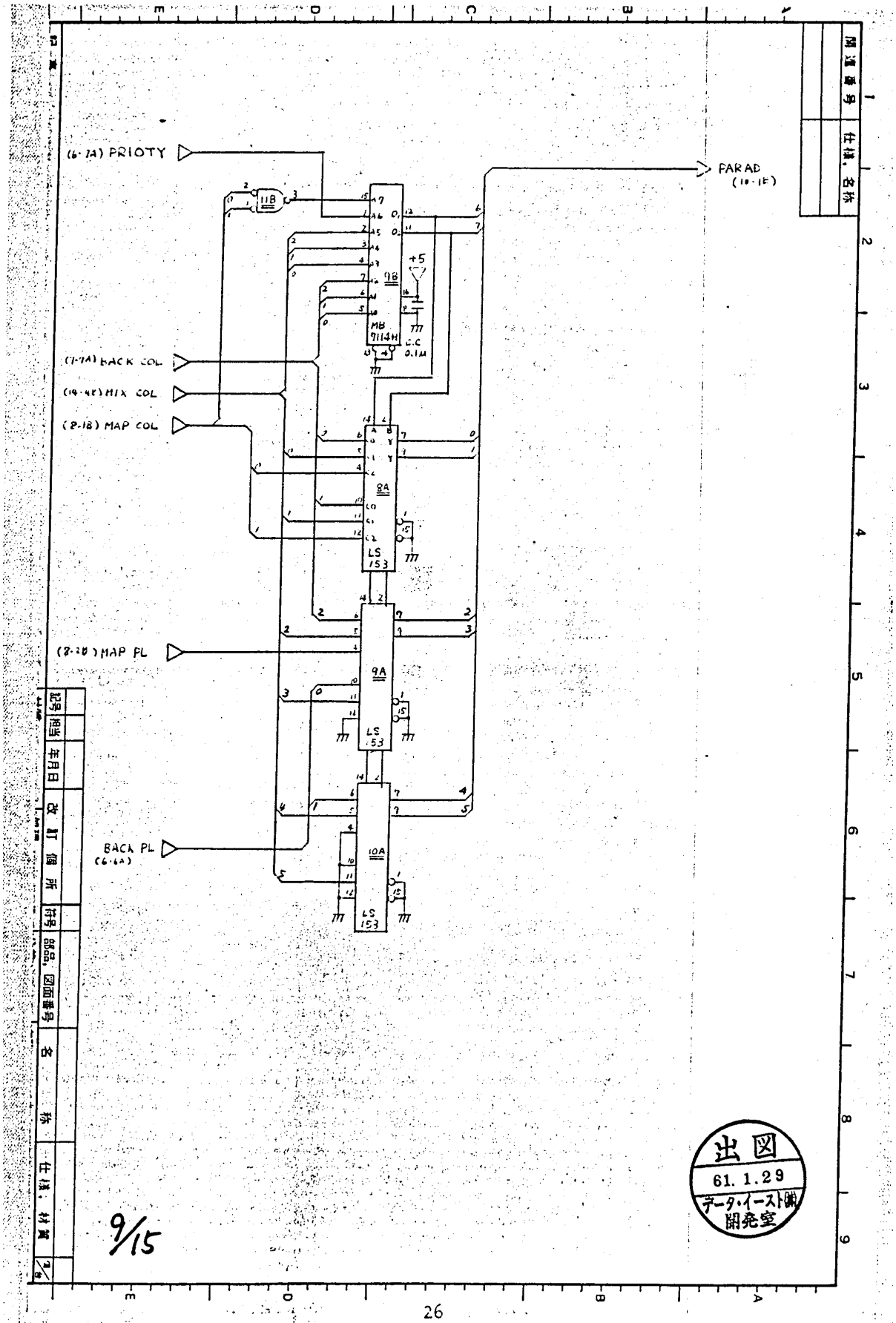
(6·7A) PRIOTY
PARAD
(10·1E)
11B
9B
MB
7114H
+5
C.C
0.1μ
(1·7A) BACK COL
(14·4E) MIX COL
(8·1B) MAP COL
8A
LS
153
(8·2B) MAP PL
9A
LS
53
BACK PL
(6·6A)
10A
LS
153
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出図
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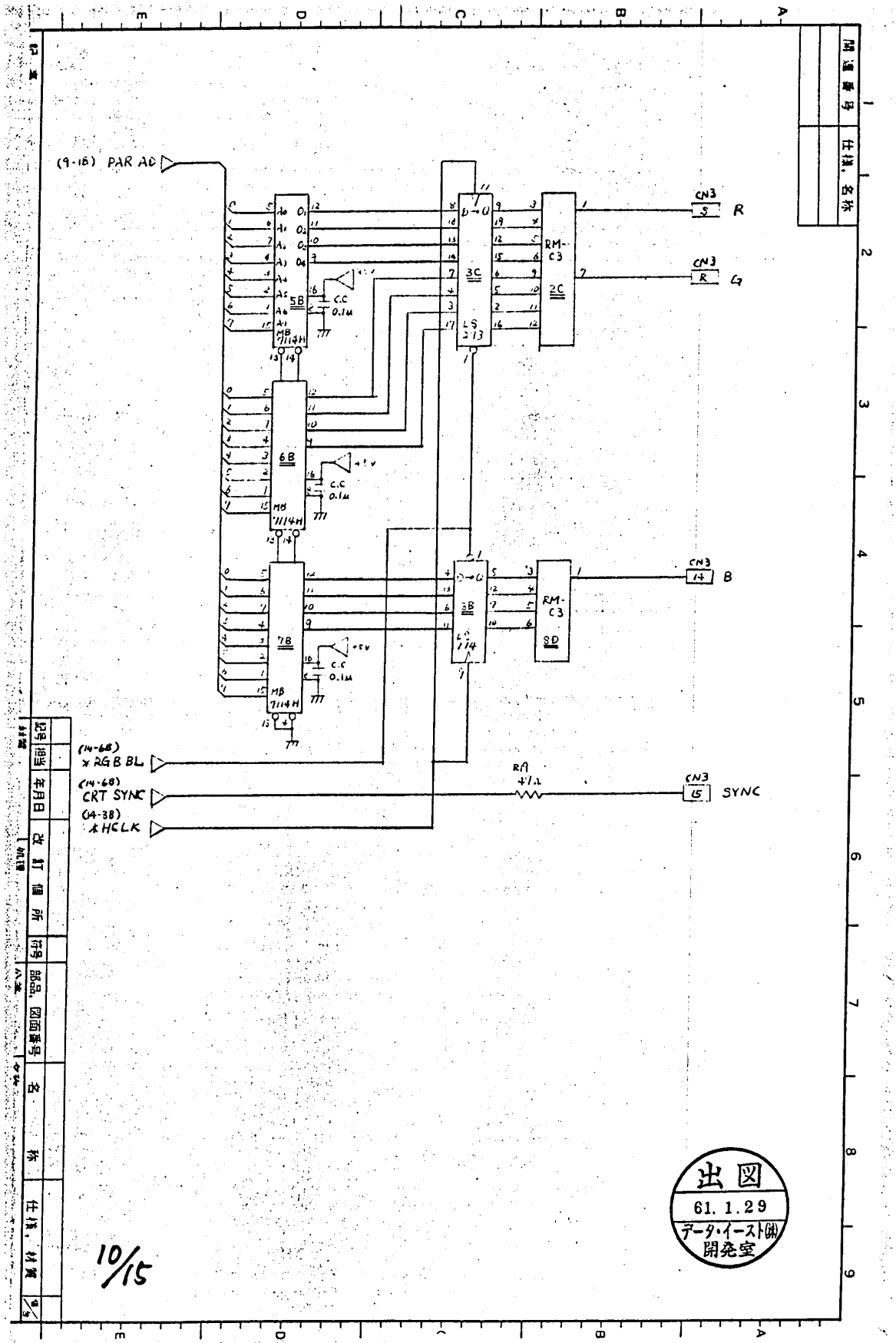
(9-16) PAR AD
5B
6B
7B
MB 7114H
C.C 0.1μ
3C
3B
LS 273
LS 174
RM-C3
2C
8D
CN3
R
G
B
SYNC
(14-68) *RGB BL
(14-68) CRT SYNC
(14-38) *HCLK
RA 471Ω
出図
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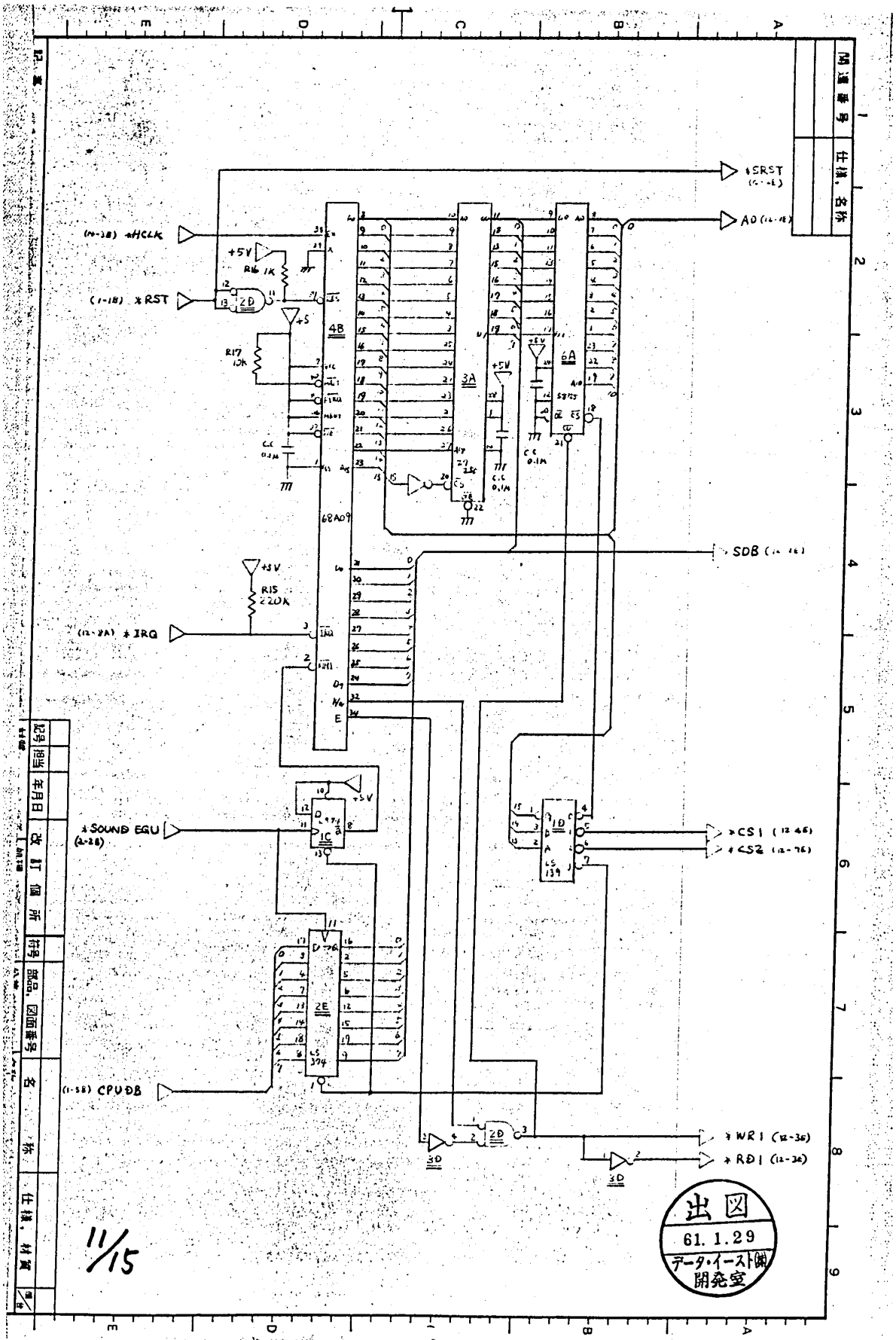
*SRST
A0
(1-18) *HCLK
+5V
R16 1K
(1-18) *RST
R17 10K
4B
3A
6A
68A09
SDB
R15 220K
(12-2A) *IRQ
*SOUND EGU
(2-28)
IC
2E
LS 374
(1-58) CPUDB
*CS1 (12-4E)
*CS2 (12-7E)
LS 139
*WR1 (12-3E)
*RD1 (12-3E)
出図
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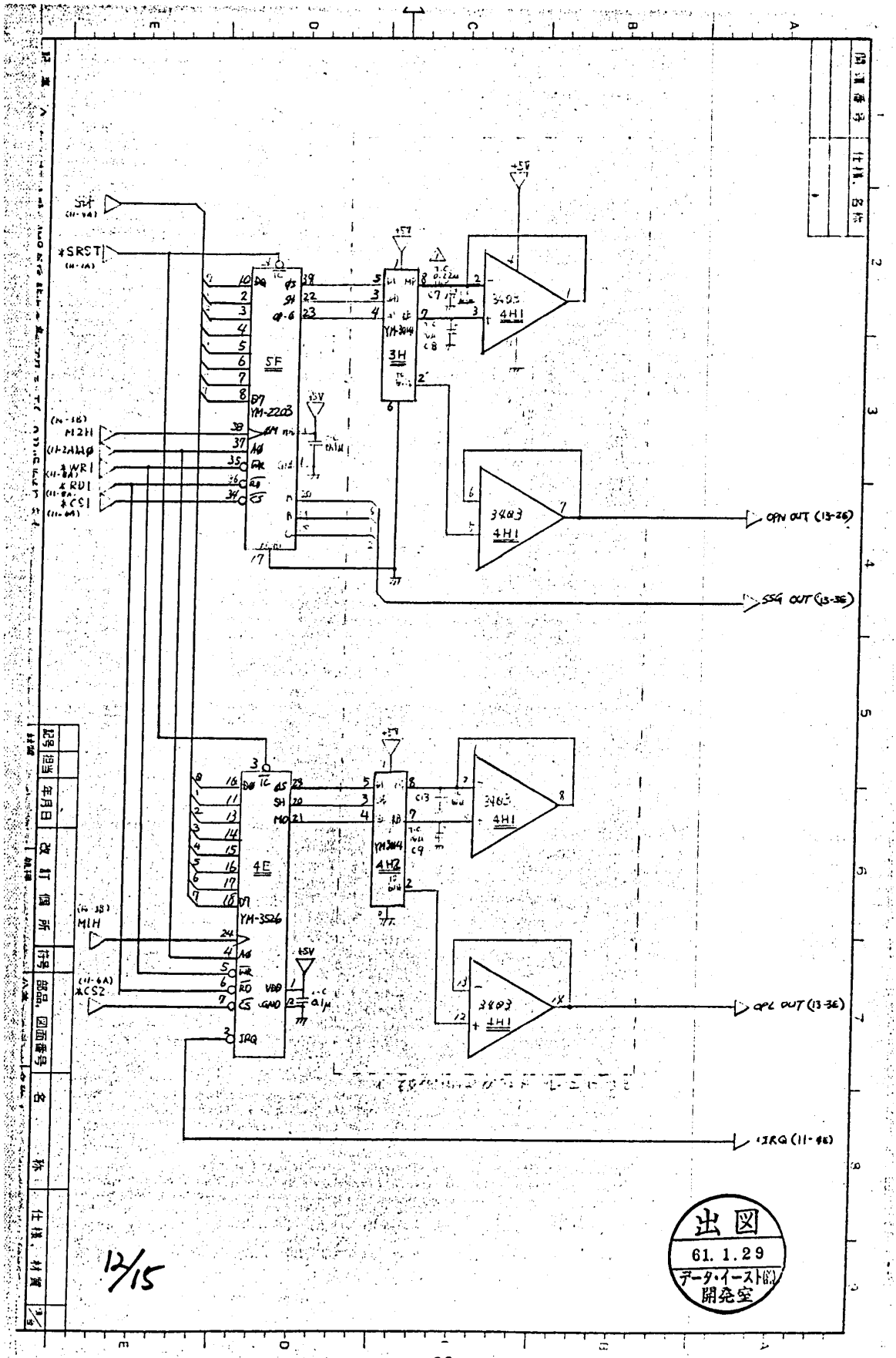
*SRST
M2H
*WR1
*RD1
*CS1
5F
YM-2203
YM-3014
3H
3403
4H1
OPN OUT (13-26)
SSG OUT (13-36)
4E
YM-3526
M1H
*CS2
YM3014
4H2
OPL OUT (13-36)
*IRQ (11-46)
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出図
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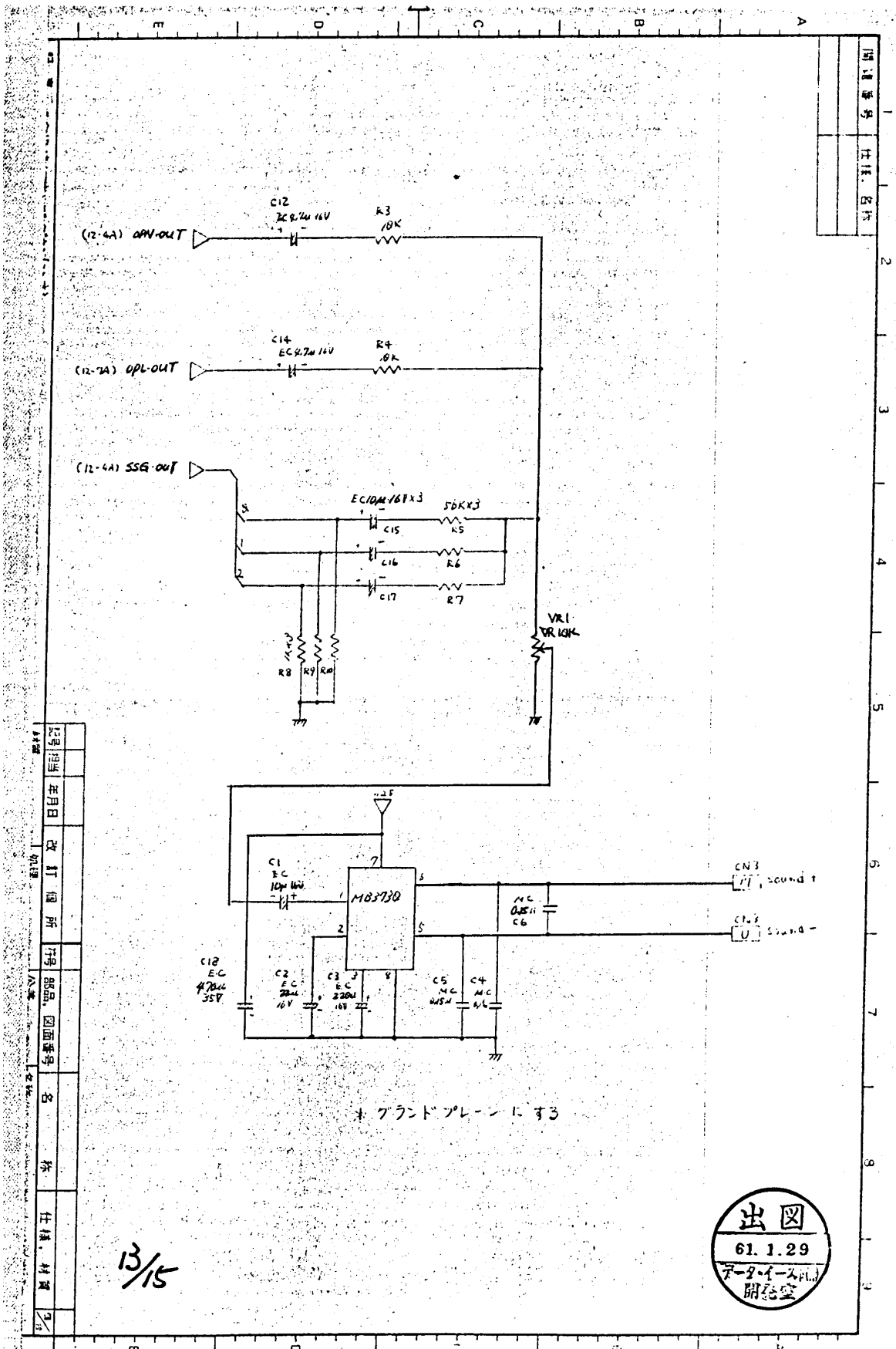

＊グランドプレーンにする

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出図
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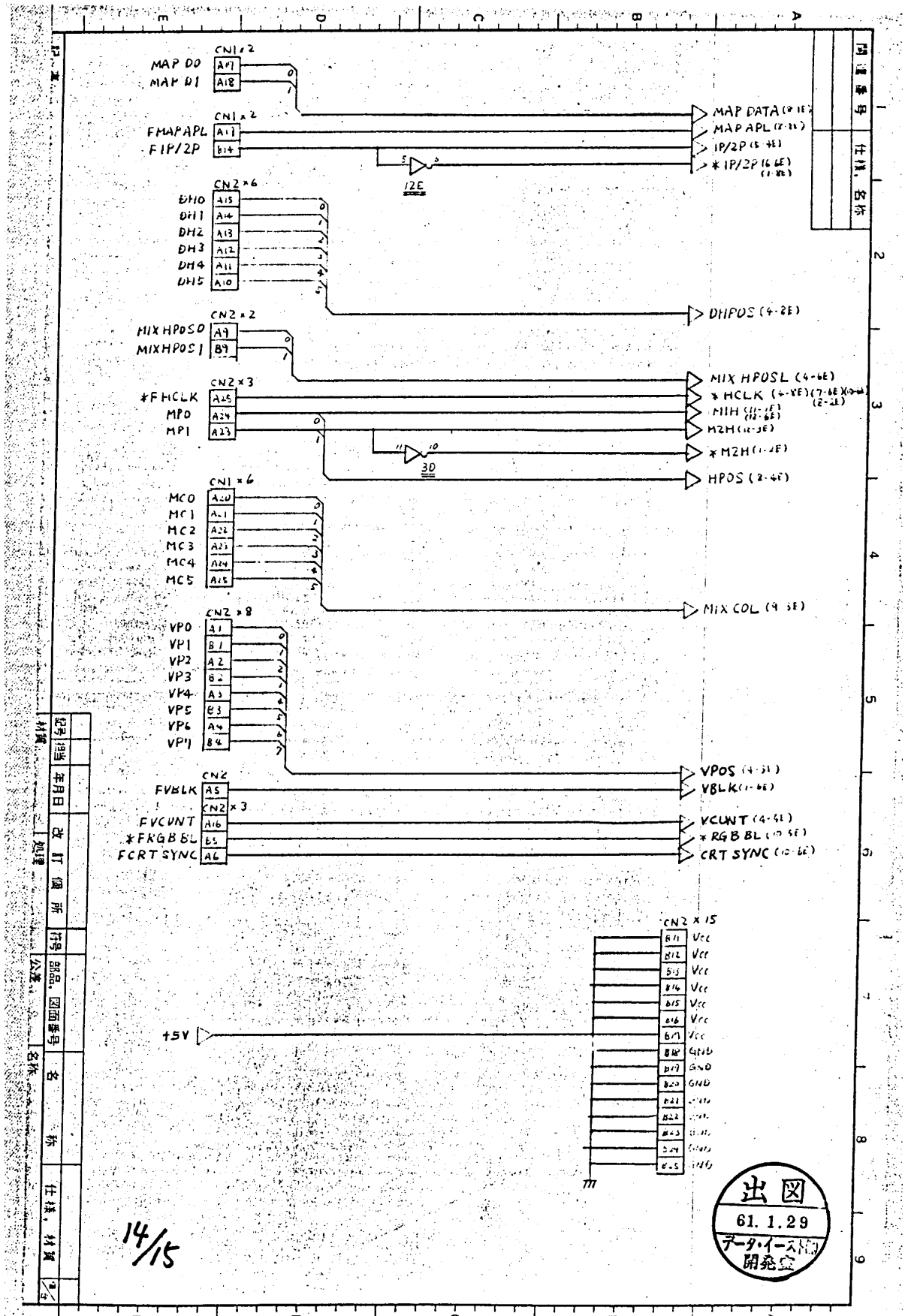
CN1×2
MAP D0
MAP D1
A17
A18
CN1×2
FMAPAPL
FIP/2P
A11
B14
MAP DATA
MAP APL
IP/2P
*IP/2P
12E
CN2×6
DH0
DH1
DH2
DH3
DH4
DH5
A15
A14
A13
A12
A11
A10
DHPOS
CN2×2
MIXHPOS0
MIXHPOS1
A9
B9
MIX HPOSL
CN2×3
*FHCLK
MP0
MP1
A25
A24
A23
*HCLK
MIH
M2H
*M2H
3D
HPOS
CN1×6
MC0
MC1
MC2
MC3
MC4
MC5
A20
A21
A22
A23
A24
A25
MIX COL
CN2×8
VP0
VP1
VP2
VP3
VP4
VP5
VP6
VP7
A1
B1
A2
B2
A3
B3
A4
B4
VPOS
CN2
FVBLK
A5
CN2×3
FVCUNT
*FRGBBL
FCRTSYNC
A16
B5
A6
VBLK
VCUNT
*RGBBL
CRT SYNC
CN2×15
B11
B12
B13
B14
B15
B16
B17
B18
B19
B20
B21
B22
B23
B24
B25
Vcc
GND
+5V
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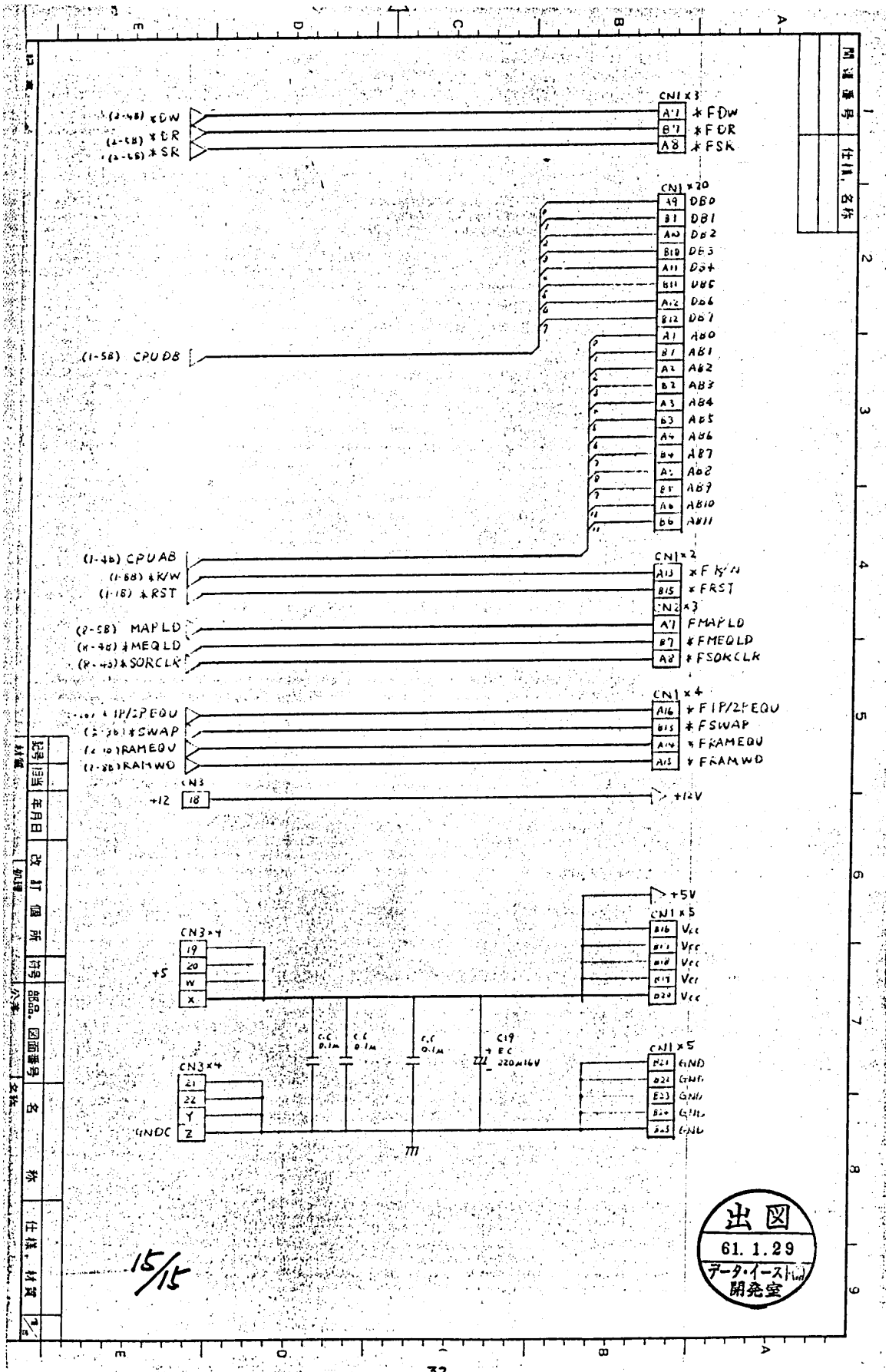
CN1×3
A7 *FDW
B7 *FDR
A8 *FSK
(2-48) *DW
(2-58) *DR
(2-66) *SR
CN1×20
A9 DB0
B1 DB1
A10 DB2
B10 DB3
A11 DB4
B11 DB5
A12 DB6
B12 DB7
A1 AB0
B1 AB1
A2 AB2
B2 AB3
A3 AB4
B3 AB5
A4 AB6
B4 AB7
A5 AB8
B5 AB9
A6 AB10
B6 AB11
(1-58) CPUDB
(1-46) CPUAB
(1-68) *R/W
(1-18) *RST
CN1×2
A13 *FR/W
B15 *FRST
CN2×3
A7 FMAPLD
B7 *FMEQLD
A8 *FSORCLK
(2-58) MAPLD
(2-48) *MEQLD
(2-43) *SORCLK
CN1×4
A16 *F1P/2PEQU
B15 *FSWAP
A14 *FRAMEQU
A15 *FRAMWD
(2-61) *1P/2PEQU
(2-56) *SWAP
(2-10) RAMEQU
(2-36) RAMWD
CN3
+12 18
+12V
+5V
CN1×5
B16 Vcc
B13 Vcc
B18 Vcc
B19 Vcc
D20 Vcc
CN3×4
19
20
W
X
+5
C.C 0.1M
C.C 0.1M
C.C 0.1M
C19 EC 220M16V
CN1×5
A21 GND
D21 GND
E23 GND
B24 GND
D23 GND
CN3×4
21
22
Y
Z
GNDC
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