

**CONTROL DATA® 3446-A/B/C
CARD PUNCH CONTROLLER**

INCLUDES FV465-A

60090400
REV Y

DIAGRAMS &
CIRCUIT DESCRIPTION
MAINTENANCE
PARTS LIST
CARD PLACEMENT
EQUATION SUMMARY
WIRE LISTS
TERM LIST

CONTROL DATA
CORPORATION

CUSTOMER ENGINEERING MANUAL



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RECORD of REVISIONS

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MANUAL TO EQUIPMENT LEVEL CORRELATION SHEET

SHEET 1 OF 1

		EQUIPMENTS					
MANUAL REV	FCO OR ECO	3446-A	3446-B	3446-C	FV465-A		
U	FCO28653	A13	B03				
	FCO28085	A13	B03	C02	A01		
V	FCO28047	A13	B03	C02	A02		
		A14	B04	C02	A02		
W	FCO30980	A15	B05	C03	A02		
Y	FCO33173	A16	B06	C04	A02		
Z	ECO36573	A16	B06	C04	A02		

60090400

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for the company's financial health and for providing reliable information to stakeholders.

2. The second part of the document outlines the specific procedures for recording transactions. It details the steps from initial entry to final review, ensuring that all necessary information is captured and verified.

3. The third part of the document addresses the role of the accounting department in this process. It highlights the need for clear communication and collaboration between different departments to ensure the accuracy and completeness of the records.

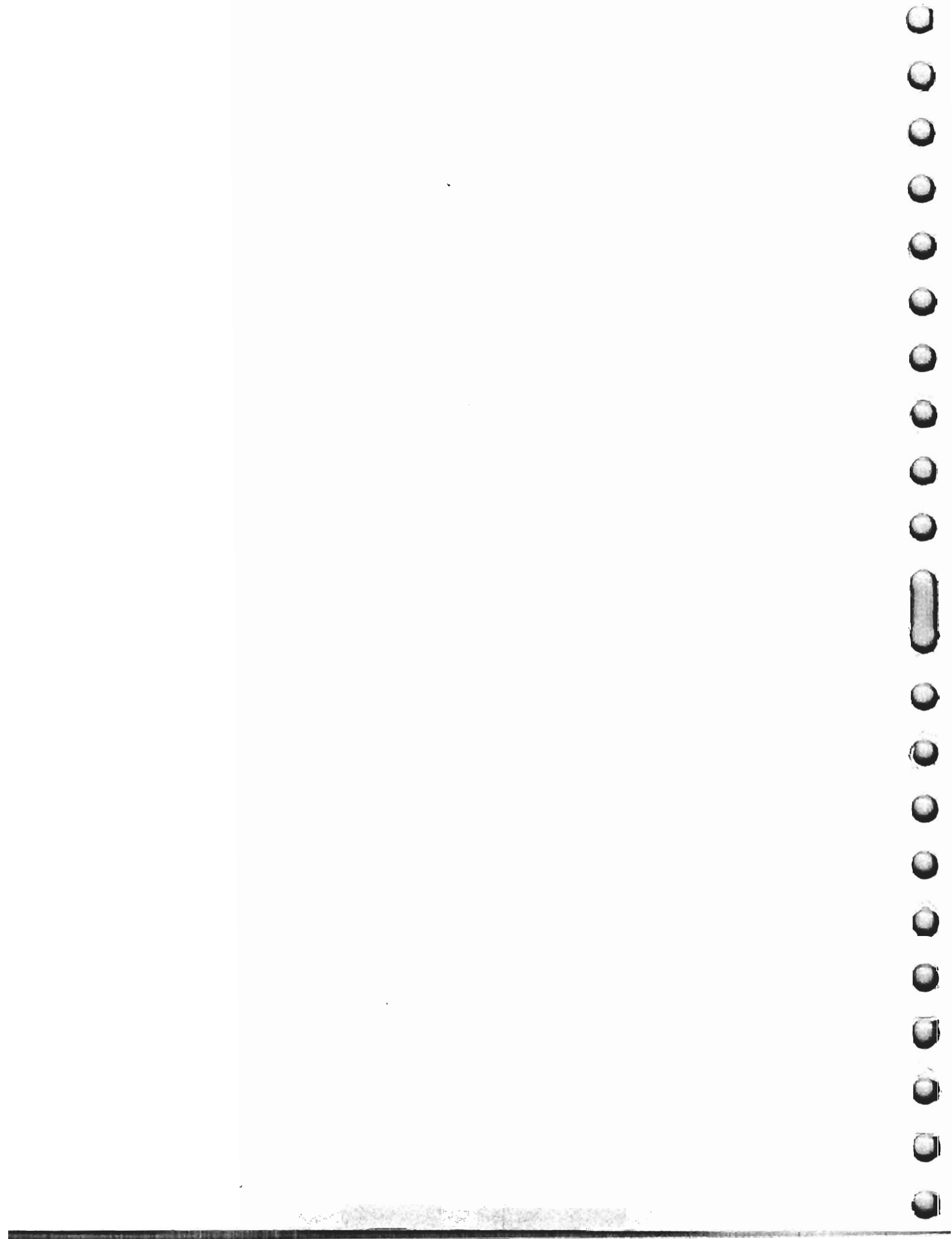
4. The fourth part of the document discusses the importance of regular audits and reviews. It explains how these activities help to identify any discrepancies or errors and ensure that the records are up-to-date and accurate.

5. The fifth part of the document concludes by reiterating the importance of maintaining accurate records and the role of the accounting department in this process. It encourages all employees to take responsibility for their own records and to work together to ensure the overall integrity of the company's financial data.



PREFACE

This publication provides customer engineering information for the CONTROL DATA® 3446-A/B/C Card Punch Controller C. E. Manual. The 3446-A is in an old style B cabinet. The 3446-B is in a new style B cabinet. The 3446-C is also in a new style B cabinet. However, it has JJA transmitter cards in place of P14's, and PJB receiver cards in place of P16's. Otherwise, the C model is identical to the other models. The FV465-A is a modification that can be installed in the 3446-A/B controller to replace the P14 and P16 cards with JJA and PJB cards. Thus, a 3446-B with an FV465-A installed is identical to a 3446-C. The JJA and PJB cards have better noise rejection than the P14 and P16 cards.



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PART 1

DIAGRAMS AND CIRCUIT DESCRIPTION

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A042	41	A435	41	A521	15	A771	21	B602	35	C033	23
A043	41	A440	41	A522	15	B000	13	B603	35	C035	23
A100	17	A441	41	A523	15	B001	13	B604	35	C040	23
A101	17	A442	41	A524	15	B002	13	B605	35	C041	23
A102	17	A443	41	A525	15	B003	13	B606	35	C042	23
A103	17	A444	41	A530	15	B006	13	B607	35	C043	23
A110	17	A445	41	A531	15	B007	13	B640	35	C050	23
A111	17	A450	41	A532	15	B010	13	B641	35	C051	23
A112	17	A451	41	A533	15	B011	13	B642	35	C052	23
A113	17	A452	41	A540	15	B020	13	B643	35	C053	23
A120	17	A453	41	A541	15	B021	13	B644	35	C059	23
A121	17	A454	41	A550	15	B022	13	B645	35	C061	23
A122	17	A455	41	A551	15	B023	13	B646	35	C400	15
A123	17	A460	41	A552	15	B024	13	B647	35	C401	15
A130	17	A461	41	A553	15	B025	13	B680	35	C450	15
A131	17	A462	39	A554	15	B028	13	B681	35	C451	15
A132	17	A463	39	A555	15	B030	13	B682	35	C500	15
A133	17	A464	39	A556	15	B031	13	B683	35	C501	15
A140	17	A465	39	A560	15	B032	13	B684	35	C503	15
A141	17	A466	39	A561	15	B033	13	B685	35	D020	25
A142	17	A467	39	A562	15	B034	13	B686	35	D021	25
A143	17	A468	39	A563	15	B035	13	B687	35	D022	25
A150	17	A469	39	A564	15	B042	13	B720	35	D023	25
A151	17	A470	41	A565	15	B043	13	B721	35	D024	25
A152	17	A471	41	A566	15	B052	13	B722	35	D025	25
A153	17	A472	41	A567	15	B090	13	B723	35	D026	25
A160	19	A473	41	A570	15	B091	13	B724	35	D027	25
A161	19	A474	41	A600	35	B092	13	B725	35	D028	25
A162	19	A476	41	A605	35	B093	13	B726	35	D029	25
A163	19	A477	41	A610	35	B094	13	B727	35	D030	31
A170	19	A481	39	A615	35	B095	13	B800	35	E001	31
A171	19	A482	39	A620	35	B200	13	B801	35	E002	31
A172	19	A483	39	A621	35	B201	13	B802	35	E003	31
A173	19	A484	39	A622	35	B202	13	B804	35	E004	31
A180	19	A485	39	A623	35	B203	13	B805	35	E005	31
A181	19	A486	39	A630	35	B204	13	B806	35	E006	31
A182	19	A487	39	A631	35	B205	13	B807	35	E007	31
A183	19	A488	41	A700	21	B206	13	B808	35	E008	31
A184	17	A489	41	A701	21	B207	13	B809	35	E009	31
A185	17	A490	41	A702	21	B208	13	B810	35	E010	31
A186	19	A491	41	A703	21	B209	13	B811	35	E011	31
A188	19	A492	41	A704	21	B210	13	B812	35	E012	31
A189	19	A493	41	A705	21	B211	13	C000	23	E013	31
A190	17	A494	41	A706	21	B212	13	C001	23	E020	31
A191	19	A495	41	A707	21	B213	13	C002	23	E021	31
A192	19	A496	41	A750	21	B214	13	C003	23	E022	31
A193	19	A497	41	A751	21	B215	13	C004	23	E023	31
A194	19	A498	41	A752	21	B216	13	C005	23	E030	31
A195	19	A499	41	A753	21	B300	13	C010	23	E031	31
A196	19	A500	15	A754	21	B301	13	C011	23	E032	31
A197	19	A501	15	A755	21	B302	13	C012	23	E033	31
A198	19	A502	15	A760	21	B303	13	C013	23	E100	31
A199	19	A503	15	A761	21	B304	13	C014	23	E101	31
A200	21	A504	15	A762	21	B305	13	C015	23	E110	31
A201	21	A505	15	A763	21	B306	13	C020	23	E111	31
A210	21	A510	15	A764	21	B307	13	C021	23	E120	31
A211	21	A511	15	A765	21	B308	13	C022	23	E121	31
A220	21	A512	15	A766	21	B309	13	C023	23	G000	25
A221	41	A513	15	A767	21	B310	13	C024	23	G001	25
A230	21	A514	15	A768	21	B311	13	C025	23	G002	25
								C030	23	G003	25

G004	J013	J200	K225	M662	R009	7	S545	29
G005	J014	J500	K226	M663	R010	7	S546	29
G006	J015	J501	K227	N040	R011	7	S547	29
G007	J016	J502	K228	N041	R012	7	S548	29
G008	J017	J503	K230	N042	R013	5	S549	29
G009	J018	J504	K231	N043	R014	5	S550	29
G010	J019	J505	K233	N044	R015	5	S551	29
G011	J020	J510	K300	N050	R017	5	S562	29
G020	J021	J511	K301	N051	R019	5	S553	29
G021	J022	J512	K302	N052	R020	5	T013	7
G022	J023	J520	K304	N053	R021	5	T014	7
G023	J024	J521	K305	N054	R022	31	T015	9
G024	J025	J522	K500	N055	S002	31	T018	11
G025	J028	J700	K501	N056	S009	31	T017	11
G026	J029	J701	K502	N057	S017	31	T019	11
G027	J030	K002	K503	N058	S025	31	T020	11
G030	J031	K003	K505	N059	S025	31	T021	11
G031	J032	K004	K510	N070	S041	31	T022	11
G032	J033	K005	K511	N071	S049	31	T023	11
G033	J034	K006	K512	N072	S057	31	T024	11
G034	J035	K007	K513	N073	S065	31	T025	11
G035	J036	K008	L001	N074	S073	31	Y009	5
G036	J040	K009	L002	N075	S080	31	Y001	5
G037	J041	K010	L009	N076	S500	29	Y002	5
G038	J042	K011	L017	N079	S503	29	Y003	5
G039	J043	K012	L025	N080	S502	29	Y004	5
G040	J050	K013	L033	N081	S503	29	Y005	5
G041	J051	K014	L041	N082	S504	29	Y006	5
H001	J052	K015	L049	N083	S505	29	Y009	5
H002	J053	K016	L057	N084	S506	29	Y213	5
H009	J054	K017	L065	N085	S507	29	Y301	5
H017	J055	K019	L073	N088	S508	29	Y406	5
H025	J056	K020	L080	N089	S509	29	Y407	21
H033	J057	K021	L501	N090	S511	29	Y408	21
H041	J058	K022	L502	N091	S512	29	Y409	21
H049	J059	K023	L503	N092	S513	29	Y410	21
H057	J060	K024	L504	N093	S514	29	Y411	21
H065	J061	K025	L505	N094	S515	29	Y412	21
H073	J063	K026	L506	N095	S516	29	Y413	41
H080	J064	K027	L507	N096	S517	29	Y500	29
H101	J065	K030	L509	N097	S518	29	Y501	29
H102	J066	K031	L510	N098	S519	29	Y502	29
H109	J067	K032	L511	N099	S520	29	Y503	29
H117	J068	K033	M501	P001	S521	29	Y504	29
H125	J070	K202	M502	P002	S522	31	Y505	29
H133	J071	K203	M503	P009	S523	31	Y506	29
H141	J072	K204	M504	P017	S524	31	Y507	29
H149	J073	K205	M505	P025	S525	31	Y508	31
H157	J074	K206	M506	P033	S526	31	Y509	31
H165	J075	K207	M507	P041	S527	29	Y510	31
H173	J076	K208	M508	P049	S528	29	Y512	29
J000	J077	K209	M600	P057	S529	29	Y513	29
J001	J078	K212	M601	P065	S530	29	Y514	9
J002	J079	K213	M602	P073	S531	29	Y515	29
J003	J080	K214	M603	P080	S533	31	Y516	31
J004	J082	K215	M620	P500	S534	29	Y517	29
J005	J083	K216	M621	R000	S535	7	Y518	9
J006	J085	K217	M622	R001	S536	29	Y531	29
J007	J086	K218	M623	R002	S537	7		
J008	J087	K219	M640	R003	S538	7		
J009	J088	K220	M642	R005	S540	7		
J010	J089	K221	M643	R006	S541	7		
J011	J090	K222	M660	R007	S543	7		
J012	J091	K224	M661	R008	S544	7		

KEY TO LOGIC SYMBOLS

(STANDARD 1604 OR 3600 CARD TYPES)

Logic diagrams represent a symbolic approach to electronic schematics. By using symbols to represent building block circuits, the diagram becomes easy to read if the reader understands the function of the symbols. In Control Data Corporation logic, two signals, a logical 0 ("0") and logical 1 ("1"), are the possible input or output conditions of a circuit. A circuit with an output of "1" is "up" and a circuit with an output of "0" is "down". Detailed descriptions of logic symbols and their associated building block circuit cards are contained in the appropriate printed circuit manual (1604 and 3600 Card Types). Refer to the Literature Distribution Center Catalog for the publication number and latest revision level.

STANDARD LOGIC SYMBOLS

Standard logic diagram symbols for Control Data equipment using 1604- or 3600-type cards are inverters, flip-flops, control delays, capacitive delays, inductive delays, and line drivers and receivers.

Inverters

An inverter is a logic element which provides an output that is an inversion of its input. When more than one input is provided to an inverter, "1's" take precedence over "0's" and drive the output of the inverter to "0". Because any "1" input of several inputs drives the output to a "0", an inverter may be considered an inverting OR (NOR) gate when more than one input is present.

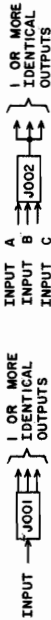


Figure 1. Inverter Symbols

Acceptable conventions for showing multiple OR inputs are given in Figure 2.



Figure 2. OR Circuit Conventions

An AND gate requires that all its inputs be "1's" in order that its output be a "1". If one or more of the inputs to an AND gate are "0", the output is a "0". Figure 3 illustrates conventions for showing AND gates feeding an inverter.



Figure 3. AND Circuit Conventions

Figure 4 illustrates a combination AND/OR input.



Figure 4. AND/OR Circuit Convention

Control Delay

A control delay is a timing device consisting of an H term which receives the input and one or more V, Y, or N terms to provide the outputs. The H term is essentially a flip-flop with controlled feedback and occupies an entire printed circuit card. The output term(s) are inverter(s) located elsewhere on the logic chassis. The "1" outputs from a control delay are clocked pulses which are delayed one phase time from the "1" inputs. Clock inputs are not shown on the logic diagrams for any H, V, Y, or N terms; these terms, which control the start and duration of the delayed output pulses, may be found in the Equation Summary. Figure 7 illustrates two representative forms of the control delay symbol, with possible inputs and outputs labelled. Figure 8 shows the electrical connections for the two forms.

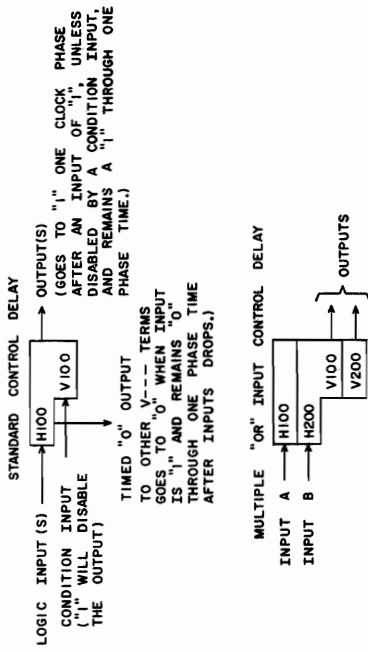


Figure 7. Control Delay Symbols

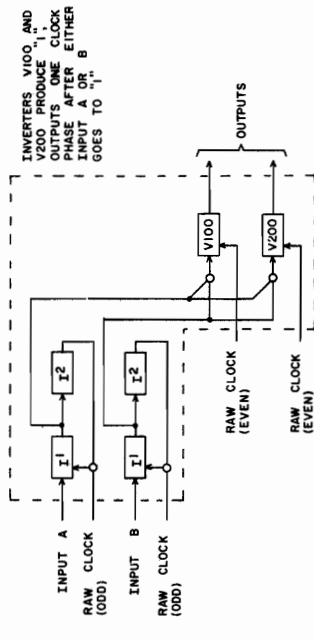
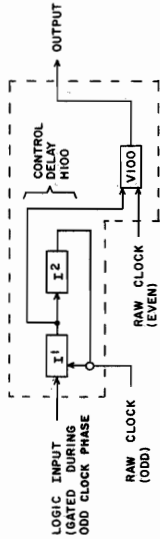


Figure 8. Electrical Connections for Control Delay

The flip-flop (FF) is a storage device with two stable states - designated as Set and Clear - and is composed of two or more inverters. The logic symbols (Figure 5) are formed by the combination of inverter symbols. By convention, Set inputs and outputs are shown in the upper part of the symbol and Clear inputs and outputs are shown in the lower part of the symbol.

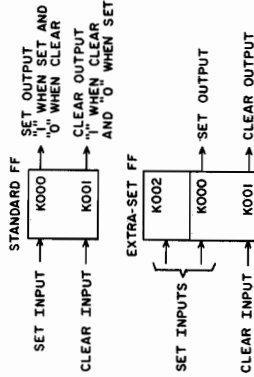


Figure 5. Flip-Flop Symbols

Figure 6 illustrates the interconnection of inverter symbols to form a flip-flop symbol. The term numbers assigned to each flip-flop are the term numbers of the internal inverters as seen by comparing the terms in Figure 5 with those in Figure 6. Notice that the Set output is the output of inverter K001, and the Clear output is the output of inverters K000 and K002.

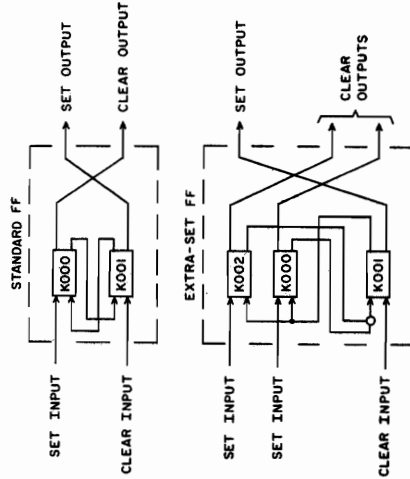


Figure 6. Internal Inverter Connections for a Flip-Flop

Control delays may have multiple inputs and/or multiple outputs. When a control delay has multiple output terms (i. e., more than one V, Y, or N term), each output term may have a separate conditioning input.

Capacitive Delays

A capacitive delay is used to delay the "1" input to a logic element. ("0" inputs are not affected by the delay.) Capacitive delays may be active or passive, depending upon whether or not transistors are used as part of the delaying circuit. Delay periods are checked by using a dual-trace scope connected to the input and output of the delay producing element. The actual connection points for the scope and probes vary for different cards and should be determined by referring to the Printed Circuit Manual.

Active delays may be recognized by the circuit letter always present as part of the card location. Pin numbers are also shown when external wiring is needed to connect the proper capacitance. In Figure 9, the pluggable delay uses this wiring to connect to capacitors on the same card. In the third example, this wiring connects to capacitors located on two separate capacitor cards.

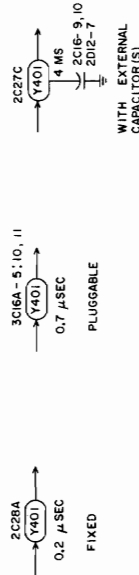


Figure 9. Active Capacitive Delays

All passive capacitive delays (Figure 10) are formed by wiring grounded capacitors, located on one or more capacitor cards, as an AND input to the affected logic element. For this reason, all passive delays show pin numbers to provide this external wiring data.



Figure 10. Passive Capacitive Delays

Capacitive delays may be adjustable or nonadjustable, depending on the card type and/or the external wiring connections on the card. When it is necessary to adjust the delay period in order to obtain specified circuit operation (usually done by varying a potentiometer in the RC network), a diagonal arrow is added to the delay symbol as shown in Figure 11.



Figure 11. Adjustable Capacitive Delays

Inductive Delays

An inductive delay is used to delay either the "1" or "0" input to a logic element or as a tapped delay line for timing of operations. The symbol for this delay is an elongated oval with a double vertical line just within the input end of the oval. When used as a tapped delay line, the inductive delay is terminated in its characteristic impedance. Inductive delays are identified

in the same manner as capacitive delays (except for the vertical lines) unless they are used as delay lines. On multi-section cards where no identifying circuit letters are present, pin numbers are shown adjacent to the input and output arrows. Figure 12 shows both kinds of inductive delays.

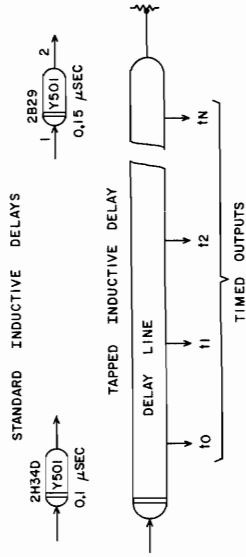


Figure 12. Inductive Delays

Line Drivers/Receivers

Voltage levels used to represent "1's" and "0's" on cables are different from those used for internal logic. The level shift to and from internal logic is made by line drivers and line receivers. These cards may be considered as inverting the signal electrically, but not logically. The letters commonly associated with these cards are L & M (1504) and R & T (3000 Series). A 3000 Series Receiver may also be used to perform a logical inversion by swapping the twisted pair wires. This usage is indicated by a circle on the input side of the symbol. In Figure 13, "1's" and "0's" have been added to clarify the logic states; they are not part of the symbol.

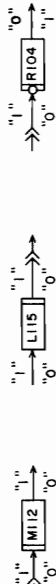


Figure 13. Typical Line Driver/Receiver Symbols

NON-LOGIC CONVENTION

The use of the double vertical bar, as shown in Figure 13, denotes a shift in signal voltage level from that used in internal logic. The double bar appears on the input or output side of the symbol, depending on which side connects to the non-logic-level signal. No particular voltage level is implied by the double bar - only that it is non-logic.

JACK ASSIGNMENTS

Each numbered term in the logic diagrams contains a jack assignment showing the physical location of that hardware element and the test point (circuit section) associated with it. For some card types, the test point letter is replaced by a pin number. For these cases, a card extender must be used in order to test that section of the card. Also, some symbols show no test point. This is because the entire card is used for one purpose (e. g. a single inverter, FF, or control delay). Figure 14 illustrates the inverter J001, with 2D12A representing its jack assignment.

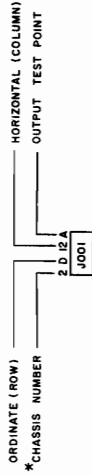


Figure 14. Jack Assignment Scheme

*When most or all jack assignments are located on one chassis, the chassis numbers for that chassis are omitted. All multi-chassis devices include a chassis number as part of each jack assignment.

CABLE IDENTIFICATION

Cable connections are represented by the MIL-STD-15 symbol and identified as to connector location and pins used, as shown in Figure 15.

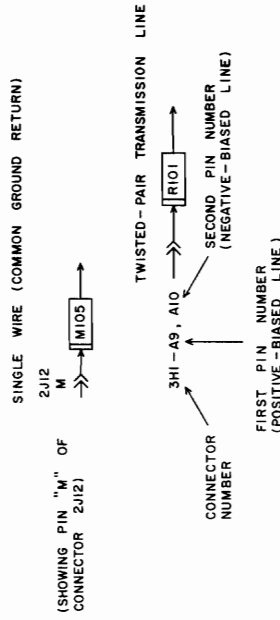


Figure 15. Cable Connections

SPECIAL LOGIC SYMBOLS

Nonstandard elements (special logic and/or non-logic elements) are represented by a special circuit symbol. Generally a rectangle as shown in Figure 16. The special circuit symbol always shows the symbol designation, jack location, and the card type. Supplemental information may also be shown such as in the case of special delay cards which indicate the delay period. For detailed information refer to the specific card type in the appropriate Printed Circuit or Logic Module Manual.

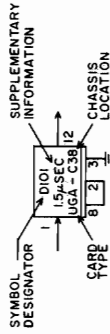


Figure 16. Symbol for Special Circuits

INPUT/OUTPUT DESIGNATIONS

Where several pages of logic are involved, a symbol index and term list (side cars) are incorporated within the manual. Also in certain instances such as special card types or on equipments for which no equation summary exists (as for peripheral devices) input and output pin numbers are indicated on each logic element as are the output destinations of the elements (Figure 17).

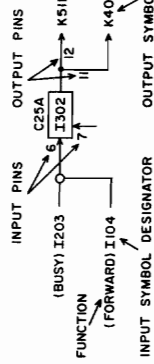


Figure 17. Input/Output Designations

INTRODUCTION

The CONTROL DATA* 3446 Card Punch Controller receives data in 12-bit bytes, loads that data in card image format into a 12 x 80 core memory matrix, transfers that image to a punched card (unload memory), and compares the number of holes punched with the number of "1" bits received. The following functional description outlines the various parts of the controller which have been delegated to perform certain aspects of this operation. Each of these parts is indicated in the text by capital letters.

The handling of information within the 3446 Controller is controlled by a TIMING CHAIN. This chain starts upon receipt of every connect, function, or data signal. (For processing Hollerith information, the chain is actually started twice for each data signal. Refer to Page 4.) This chain establishes definite times for gating in data, checking for parity, and sending Reject or Reply signals back to the data channel.

Incoming data moves to a DATA TRANSLATOR which, unless instructed differently by a Negate function, converts the 12-bit byte into two Hollerith characters. The data is fed simultaneously to a BIT COUNTER which records the number of "1's" present in the two characters (or one 12-bit byte in the case of binary information). This Bit Counter is comprised of a BIT SWEEP SCANNER to probe successively each of the 12-bit positions (rows), a BIT DETECTOR which recognizes when a "1" exists in any of the bit positions and advances the Bit Counter, and a two-rank BIT COUNT HOLDER to which the total bit count for a card image is transferred before that card is punched. The count holder is necessary since the Bit Counter will begin to record "1" bits for the second card image before the bit count for the first card image can be compared with the number of holes actually punched in the first card.

At the same time as the bit count is being made, the LOAD MEMORY phase takes place. A mod 120₈ counter, which is advanced on each Timing Chain cycle, enables the memory drive lines such that each character (Hollerith or 12-bit binary) is stored in successive columns of the 12 x 80 memory matrix. As soon as memory has been

*Registered trademark of Control Data Corporation

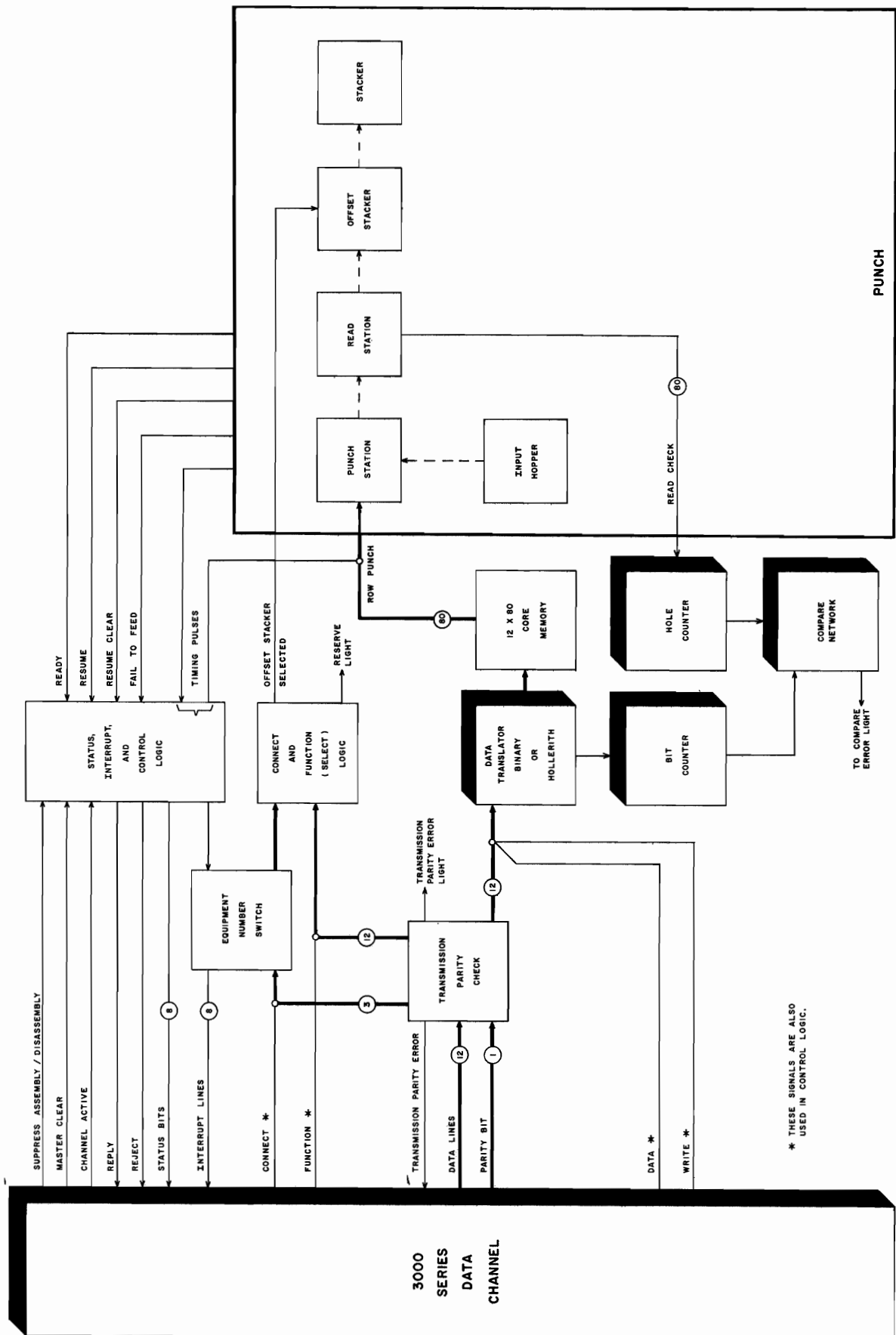
loaded, a data lockout is established to prevent receiving any more data until the UNLOAD MEMORY cycle (punch) has been completed, and the bit count is transferred from the bit counter to the first rank of the Bit Count Holder.

The memory is unloaded under the control of an effective mod 14₈ counter which probes successive rows in the memory matrix. Any "1" bit (up to 80 bits) in that row will be transferred to the corresponding row magnet in the punch. The mod 14₈ counter is advanced by row pulses from the punch.

After memory has been unloaded (the last row on the card has been punched), three things occur: The data lockout is dropped permitting the next card image to be loaded into memory, the bit count for the card just punched is transferred to the second rank of the Bit Count Holder, and the punched card moves into the read station for a hole count. Here, the 80 read brushes transfer impulses from holes in each card row to an 80-FF HOLE DETECTOR, which is probed for every row by a mod 12B₈ READ SWEEP SCANNER. As the scanner sweeps the Hole Detector, pulses from each of the set FFs advance a HOLE COUNTER. (Row-by-row reading of the first card is concurrent with the row-by-row punching of the second card in the IEM 523 and 544 punches, and slightly later in the CONTROL DATA 415 punch.)

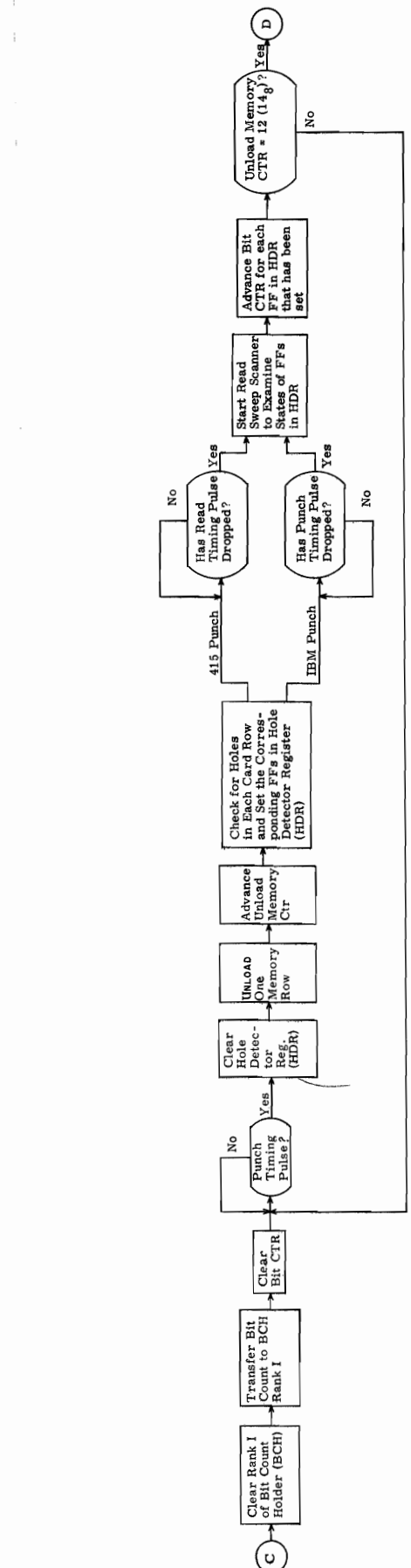
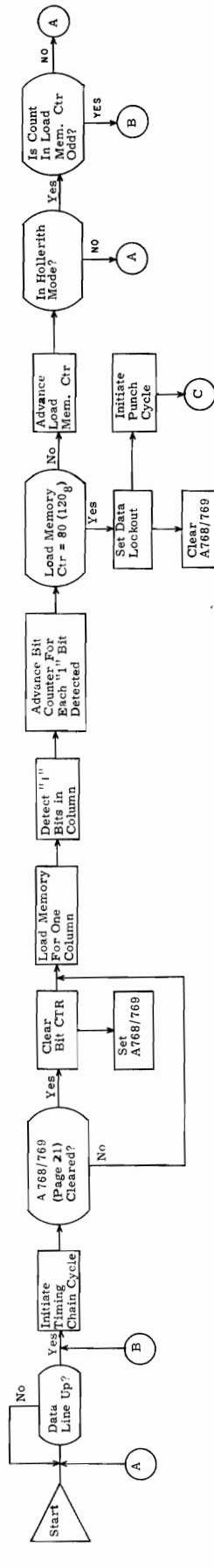
The final operation uses a COMPARE NETWORK to match the total number of holes in the first card, as indicated by the value stored in the Hole Counter, with the number of "1" bits in the first card image, as indicated by the value stored in the second rank of the Bit Count Holder. If a Compare disparity exists, the Compare Error status line will come up. The Compare Error indication may be used as the programmer sees fit. If a 415 Punch is being used, this may involve sensing for the error and jumping to a routine which sends a Select Offset Stacker function code (0003) to the controller. Such a code will cause the offending card to be offset about 3/8 inch from the rest of the cards in the output stacker.

The three phases of the operation, Load, Punch, Compare, are shown in the Sequence Flow diagram on page 3.



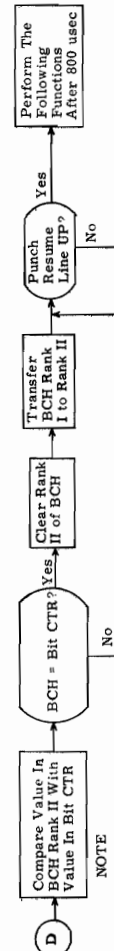
* THESE SIGNALS ARE ALSO USED IN CONTROL LOGIC.





Sample Punch Ready Conditions and Accordingly Set/Clear Ready FF

- Set Punch Resume FF
- Clear Bit Counter
- Set Punch Control FF
- Set Write Resume FF
- Clear Data Lockout FF
- Clear Punch Control FF



NOTE
The first card read will be the blank card fed into the read station during the punch preparation. Therefore, the rank II Value will agree with the Bit CTR Value (Both all "0's").

NOTE
Controller Now Ready to Receive Next Data Record

NOTE
After the last card has been punched, it will be necessary to program a check last card (0004) if it is desired to compare that card.

TIMING CHAIN

As soon as power is applied to the controller, the Start FF (K008/009) is set. The chain is started upon receipt of a Connect and all ensuing function signals by breaking the AND input to J016, thereby setting K002/003. Note that a function signal does not start the chain if the controller has not been fully connected (J074 = 1). Data signals start the chain after a 2 μsec delay by allowing J032 to complete the AND input to K002/003 if the data lockout (Page 29) has not been set. When processing data, the Start FF is automatically set by J080 each time the data signal drops (J032 = 0).

When processing Hollerith characters, the chain must be started twice for each data signal unless the Suppress Assembly/Disassembly (A/D) mode is in effect, or the Negate function has been selected. Consider first the normal case, that of converting the 12-bit byte into two Hollerith characters. Upon receipt of a data signal, K030/031 is set by a 2 μsec pulse (R015, J015), after which the Timing Chain commences. At Time 2 of the first cycle, the Start FF is cleared, and at Time 4 the Load Memory counter (Page 23) is advanced to a count of 1, thereby bringing up C005. At Time 5, K030/031 is cleared, and because R015 (data signal) is still up, a second cycle is started as the chain passes through Time 0. At Time 4 of the second cycle, since K030 is now a "1", a Reply is sent out (Page 7) and the Load Memory counter is advanced, turning off C005. (Note that C005 is up only for odd counts in the Load Memory counter

because of the toggling effect of the T4 Advance pulses on the first stage of that counter,)

In the second case, where programming a Negate function forces the data byte to be interpreted as binary information, K030/031 is cleared at Time 3 and a Reply sent at Time 4. Since the Negate FF (Page 9) is set, then K208 = 0 and the chain cannot be started a second time.

In the third case, where programming a 3100/3200 character instruction brings up the Suppress A/D line, K030/031 is set at Time 0, then immediately cleared by the AND input of R021 K212. Also since J091 is a "0", the chain cannot be started a second time.

NOTE

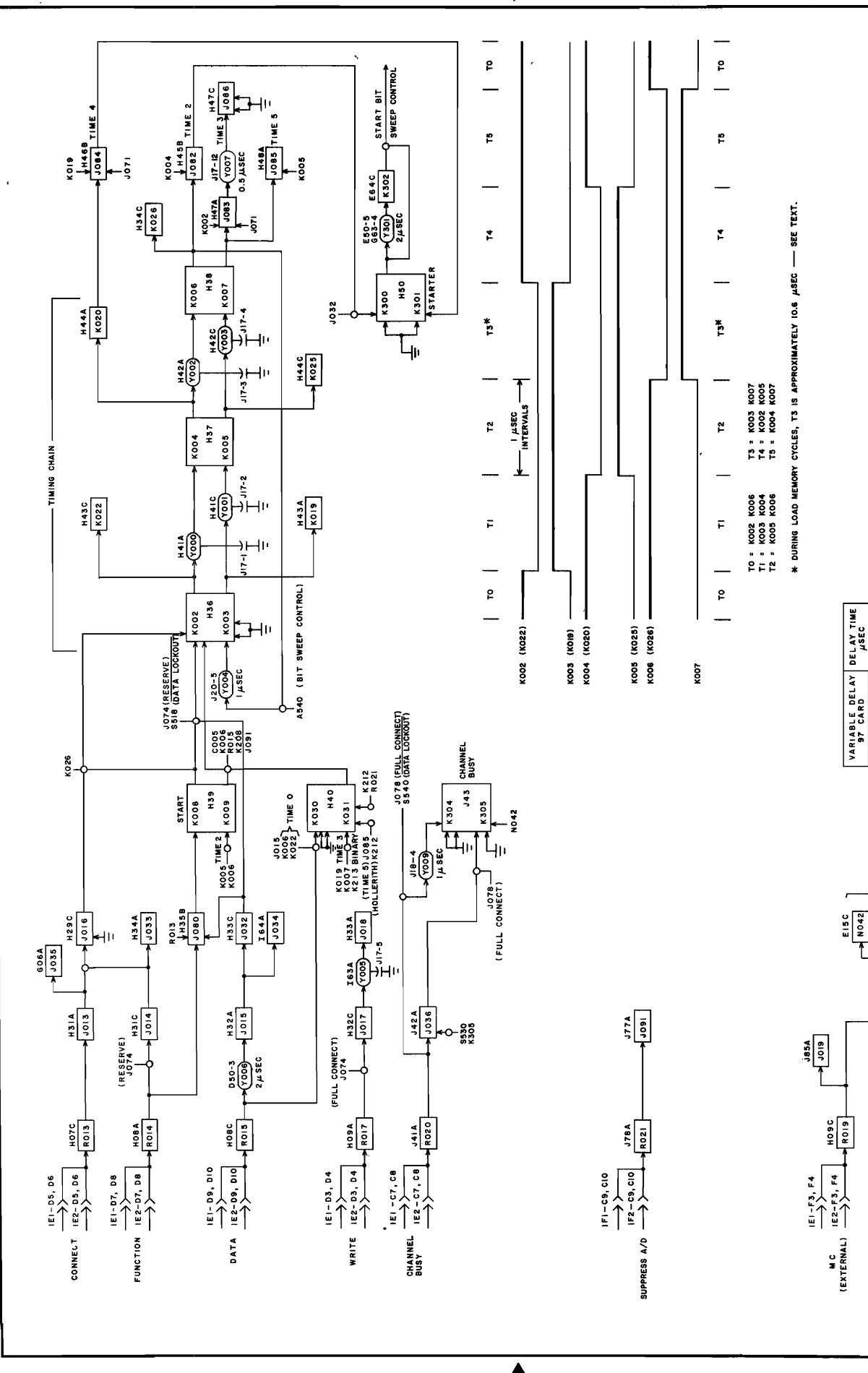
If a Negate function were to be programmed for a character instruction, the R021 input to K030 would have no effect, and K030/031 would be cleared at Time 3, as in the case of handling binary data. However, the data in the upper 6 bits of the byte would be lost as is shown in the discussion of the Data Translator on page 12. The Negate function cannot be programmed for an Output Character (75) instruction because of this lost data.

TERM	LOCATION	PAGE	DEFINITION
C005	C47C	23	Load Memory Counter
J071	H30	11	Parity Check
J074	H56B	7	Reserve
J078	H57C	7	Full Connect
K208	G04	9	Hollerith
K212	G11B	9	Hollerith
K213	G12B	9	Binary
S530	F72A	29	Data Lockout
S540	J21C	29	Data Lockout
K032	J86A	7	
S518	F74A	29	Data Lockout
A768	I65A	21	
S517	F79C	29	Write Resume
S553	J87B	29	Data Lockout

REVISIONS	
REV.	DESCRIPTION
1	REVISED
2	REVISED
3	REVISED
4	REVISED
5	REVISED

APPROVED: [Signature]
DATE: [Date]
BY: [Name]

DESIGNED: [Name]
DRAWN: [Name]
CHECKED: [Name]
APPROVED: [Name]

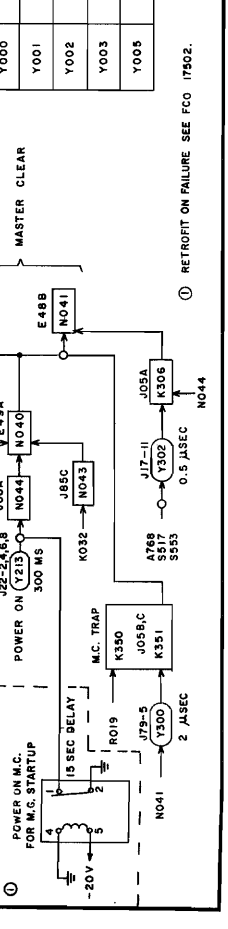


TIMING CHAIN

VARIABLE DELAY	DELAY TIME
BY CARD	μSEC
Y000	0.7 TO 1.1
Y001	0.7 TO 1.1
Y002	0.7 TO 1.1
Y003	0.7 TO 1.1
Y005	0.7 TO 1.1

TO = K002 K006
TI = K003 K004
T2 = K005 K006
T3 = K003 K007
T4 = K002 K005
T5 = K004 K007

* DURING LOAD MEMORY CYCLES, T3 IS APPROXIMATELY 10.6 μSEC — SEE TEXT.



Ⓜ RETROFIT ON FAILURE SEE FC0 17502.

DATA INPUT

Incoming data is received by the R0XX cards and the associated J0XX inverters, and is delivered to the parity network (Page 11) and the Data Translator (Page 13).

SELECT AND RESERVE

Bits 9, 10, and 11 are routed to the Equipment Number switch. If the switch position matches these bits in the Connect code, J072 becomes a "1". Then at Time 2, if there is no parity error, the Connect FF is set. The Reserve FF is set at Time 3 and the Reply FF is set at Time 4.

A Release code (XX00) or a Master Clear clears the Connect and Reserve FFs through K033.

Inverters J088 and J089 allow the Release and Disconnect (XX00), Select Interrupt on Ready and Not Busy (XX20), or Release Interrupt on Ready and Not Busy (XX21) function codes to be accepted and a Reply sent to the data channel, even when the controller is busy. Timing considerations do not permit this for other codes. For example, an Interrupt on End of Punch (EOP), if not locked out while the controller is busy, could be received just as the punch cycle is being completed. Under these conditions there would be a chance of missing the EOP pulse (see Page 29) and the computer system would hang up, waiting for the interrupt condition to be satisfied.

TERM	LOCATION	PAGE	DEFINITION
J013	H31A	5	Connect
J019	J85A	5	External Master Clear
J030	H40	7	Data (Time 0)
J032	H33C	5	Data
J033	H34A	5	Full Connect
J070	H30	11	Parity Error
J080	H35B	5	Connect Function Data
J082	H45B	5	Time 2
J083	H47A	5	Time 3
J084	H46B	5	Time 4
J500	J46A	9	XXX0
J501	J46C	9	XXX1
J510	J49B	9	XX0X
J512	J70C	9	XXX0
J522	J716	9	XX2X
K022	H43C	5	Timing Chain Time 4
K025	H44C	5	Timing Chain
K030	H40A	5	Master Clear
N044	J88A	5	Master Clear
R013	H07C	5	Connect
R014	H08A	5	Function
S531	G15A	29	Data Lockout

INTERRUPTS

The Interrupt on Ready and Not Busy FF may be set up at any Time 3 (J090); other interrupts can be set up only when the controller is Not Busy (see the S531 input to Gate term J075) as explained on Page 6. When the interrupt condition occurs, the appropriate K22X FF is set, thereby gating the interrupt state information to the status lines. Setting any K22X FF also enables an output from T015. This output is fed to the Equipment Number switch (S4) which delivers the signal to the proper interrupt line.

K219 holds all K20X FFs in the Clear state until a full Connect has been made. K220 restores this Clear signal during a Clear code (XX05) or Master Clear.

NEGATE B → H

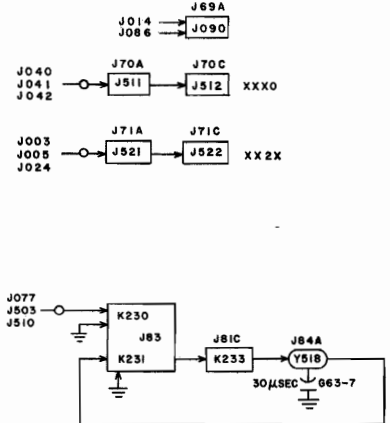
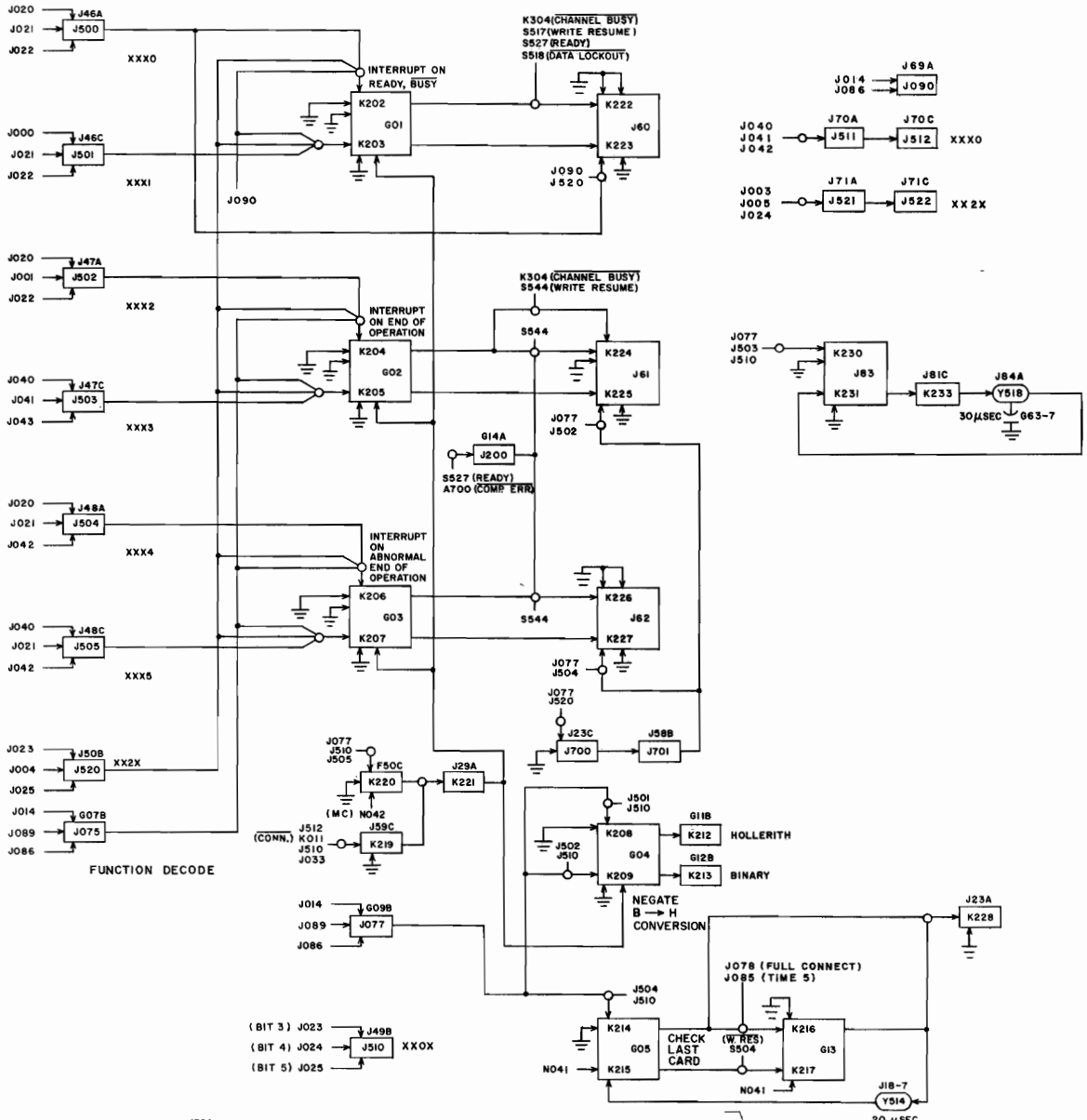
This FF is set in a straight forward manner by the XX01 code if the controller is Not Busy (S531 = 0). It is cleared by code XX02, a Clear code (XX05), or a Master Clear.

CHECK LAST CARD

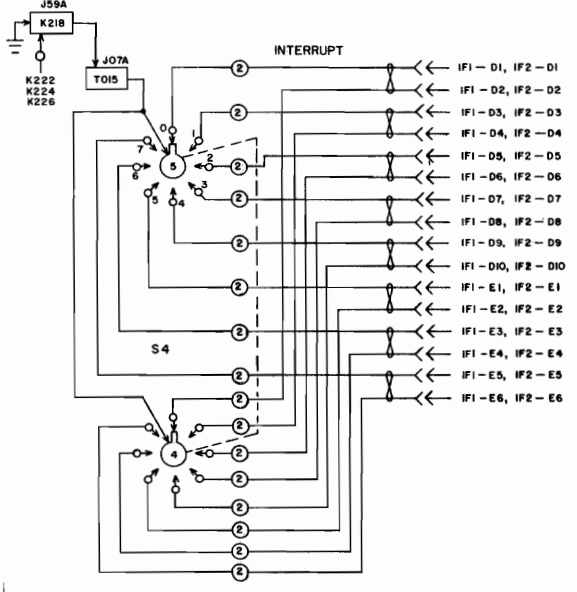
When the last card has been punched, the punch will stop since the feed hopper is empty. As soon as the controller becomes Not Busy, an XX04 code should be programmed to move the last card past the Read Check station and into the stacker.

K214/215 is set at Time 3 and K216/217 is set at Time 5. K217 energizes the punch clutch (see S528 on Page 29) and sets up the delay to clear K214/215. K216/217 is cleared when the Resume Clear pulse from the punch clears the Write Resume, S504/505. The inverter K228 performs a redundant Clear for the Bit Counter (Pages 17, 19) and Rank I of the Bit Count Holder (Page 21).

TERM	LOCATION	PAGE	DEFINITION
A700	I59	21	Previous Memory Count Holder
J000	H10A	7	Bit 0
J001	H10C	7	Bit 1
J003	H11C	7	Bit 3
J004	H12A	7	Bit 4
J005	H12C	7	Bit 5
J014	H31C	5	Function
J020	H17A	7	Bit 0
J021	H17C	7	Bit 1
J022	H18A	7	Bit 2
J023	H18C	7	Bit 3
J024	H19A	7	Bit 4
J025	H19C	7	Bit 5
J033	H34A	5	Full Connect
J040	J44A	7	Bit 0
J041	J44C	7	Bit 1
J042	J45A	7	Bit 2
J043	J45C	7	Bit 2
J076	H57A	7	Reserve
J078	H57C	7	Reserve
J085	H48A	5	Time 5
J086	H47C	5	Time 3
J089	J75C	7	(XX00 + XX20 + XX21) Busy + Reject Connect
K011	H51	7	Reserve
K024	J66A	7	Reserve
K304	J43	5	Channel Busy
N041	E48B	5	Master Clear
N042	E15C	5	Master Clear
S504	F75	29	Write Resume
S517	F79C	29	Write Resume
S518	F74	29	Data Lockout
S527	F76	29	Ready
S544	E64A	29	Data Lockout



(BIT 3) J023 → J49B
 (BIT 4) J024 → J510
 (BIT 5) J025 → J075



TERM	LOCATION	PAGE	DEFINITION
A701	I69	21	Compare Error
J000	H10A	7	<u>Bit 0</u>
J001	H10C	7	<u>Bit 1</u>
J002	H11A	7	<u>Bit 2</u>
J003	H11C	7	<u>Bit 3</u>
J004	H12A	7	<u>Bit 4</u>
J005	H12C	7	<u>Bit 5</u>
J006	H13A	7	<u>Bit 6</u>
J007	H13C	7	<u>Bit 7</u>
J008	H14A	7	<u>Bit 8</u>
J009	H14C	7	<u>Bit 9</u>
J010	H15A	7	<u>Bit 10</u>
J011	H15C	7	<u>Bit 11</u>
J012	H16A	7	<u>Parity Bit</u>
J022	H 18A	7	Bit 2
J028	H20A	7	Bit 8
J035	G06A	5	<u>Connect</u>
J078	H57C	7	Full Connect
J082	H45B	5	Time 2
K004	H37A	5	Timing Chain (Time 1)
K011	H51	7	Connect
K019	H43A	5	Connect
K021	H55A	7	Connect
K027	J28A	7	Connect
K223	J60	9	Interrupt due to Ready and Not Busy
K225	J61	9	Interrupt due to End of Operation
K227	J62	9	Interrupt due to Abnormal End of Operation
N044	J88A	5	Master Clear
R000	H01A	7	Bit 0
R001	H01C	7	Bit 1
R002	H02A	7	Bit 2
R003	H02C	7	Bit 3
R004	H03A	7	Bit 4
R005	H03C	7	Bit 5
R006	H04A	7	Bit 6
R007	H04C	7	Bit 7
R008	H05A	7	Bit 8
R009	H05C	7	Bit 9
R010	H06A	7	Bit 10

FORM CA 210

TERM	LOCATION	PAGE	DEFINITION
R011	H06C	7	Bit 11
R012	H07A	7	Parity Bit
R019	H09C	5	External Master Clear
S521	F77A	29	Fail to Feed
S529	F87C	29	Punch Resume
S531	G15A	29	Data Lockout
S534	F77C	29	Ready

FORM CA 210

DATA TRANSLATOR

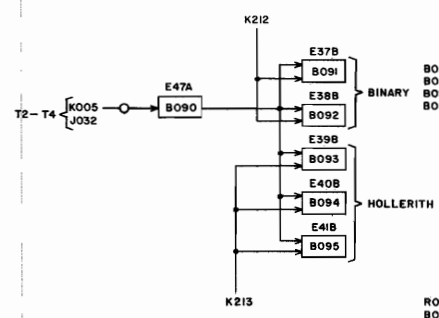
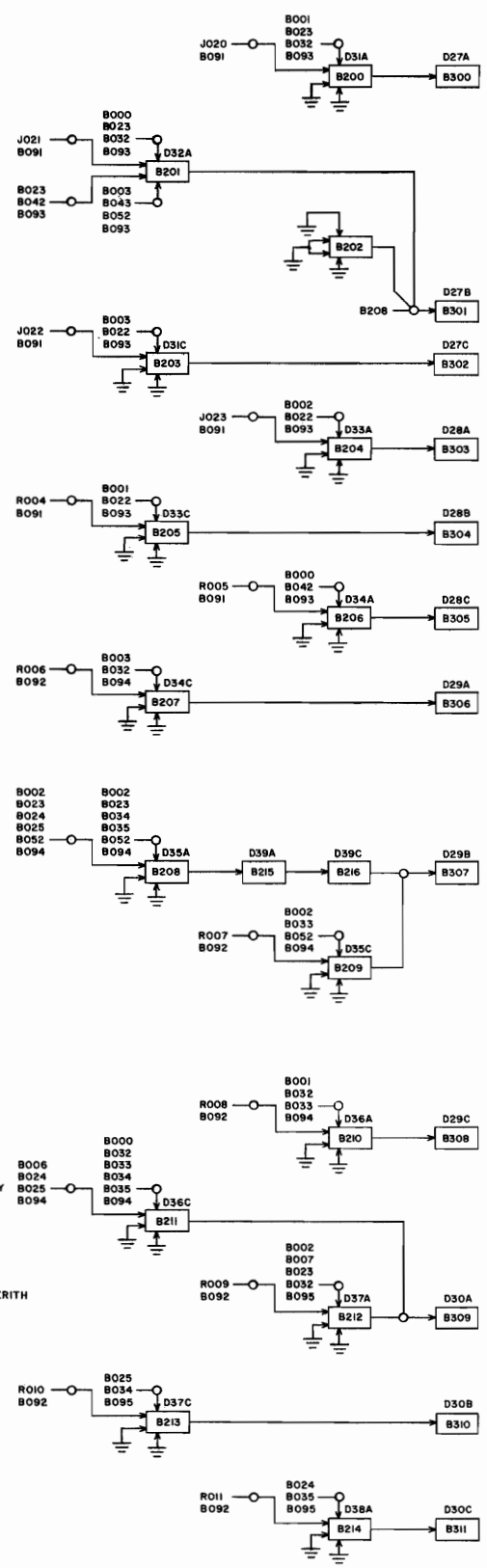
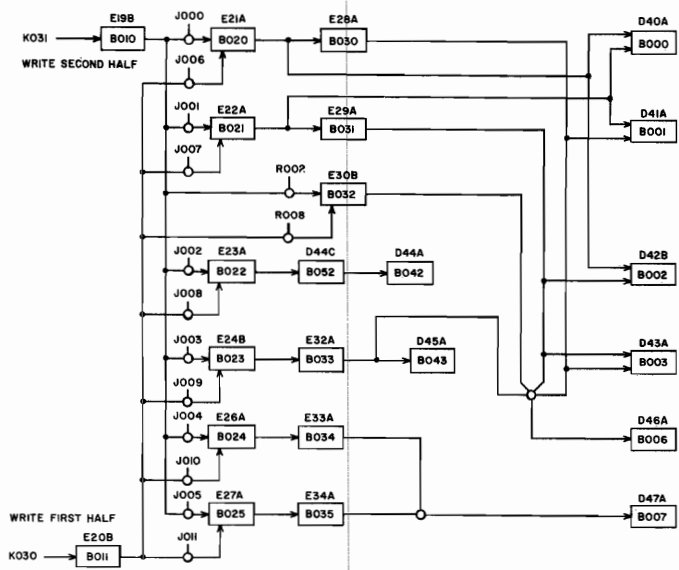
The Data Translator consists of two parts, the Input Enable and the Translator. The Input Enable (B09X) determines whether the data will be interpreted as Hollerith or binary and, if Hollerith, whether the upper or lower 6 bits of the byte are to be gated to the Translator. The Translator converts each 6-bit internal BCD code into a Hollerith character. Outputs from the Translator (B2XX) energize the row drive line generators, G000 - G011 (Page 25). Inputs to the GXXX cards must all be "0" for current to flow.

Binary information is fed directly from the data channel to the Translator outputs, using the gates identified by terms B091 or B092. For Hollerith conversion, bits 6-11 of the BCD byte (J006-J011) are gated to the Translator during the first Timing Chain cycle (K030 = 0). Bits 0-5 are gated during the second cycle (K031=0). Outputs from the Translator, for either binary or Hollerith information, are available from Time 2 to Time 4.

Note that if the Suppress A/D is in effect, K030/031 becomes cleared immediately, and the lower 6 bits of the byte are translated and stored during the first Timing Chain cycle. This means that the Hollerith character represented by bits 0-5, which normally is stored in the second (even) column of memory, is now stored in the first (odd) column. Also, during the Suppress A/D, only bits 0-5 are transmitted to the controller, so that the upper 6 bits of the byte would be lost if the data were to be interpreted as binary.

The B3 -- outputs are used by the Bit Detector, page 14.

TERM	LOCATION	PAGE	DEFINITION
J000	H10A	7	Bit 00
J011	H15C	7	Bit 11
J020	H17A	7	Bit 00
J021	H17C	7	Bit 01
J022	H18A	7	Bit 02
J023	H18C	7	Bit 03
J032	H33C	5	Data
K005	H37	5	Timing Chain
K030/ K031	H40	5	Data
K212	G11B	9	Hollerith
K213	G12B	9	Binary
R002	H02A	7	Bit 02
R004	H03A	7	Bit 04
R005	H030	7	Bit 05
R006	H04A	7	Bit 06
R007	H04C	7	Bit 07
R008	H05A	7	Bit 08
R009	H050	7	Bit 09
R010	H06A	7	Bit 10
R011	H06C	7	Bit 11



BIT SWEEP SCANNER

This scanner is a three-stage, double-rank counter which is advanced every 1.6 μ sec by 0.4 μ sec pulses from a 2.5 mc Scanner Clock. The counter is started at Time 2 of every Timing Chain cycle by a 2 μ sec pulse from the Starter FF K301/302 (see Page 5), which sets the Bit Sweep Control FF A540/541. The counter counts to 7, then through 0 to 4, whereupon A540/541 is cleared. Thus the effective modulus of the counter is 12 (14g). Outputs from Detector Control FF A530/531, which is set after the scanner reaches a count of 7, determine whether the detector will respond to "1's" in rows 9 through 3, or in rows 2, 1, 0, 11, and 12. Note that the first 0 count from the scanner does not enable any bit detection.

SCANNER CLOCK

The 2.5 mc Scanner Clock cards, C450 and C451, cause FFs K510/511 and K512/513 to switch at a 1.25 mc rate. This frequency is then further divided to 0.625 mc by K500/501 and K502/503. The duration of the Scanner Advance and Transfer pulses is controlled by K512/513 (0.4 μ sec); the repetition rate of those pulses is controlled by K502/503 (1.6 μ sec).

BIT DETECTOR

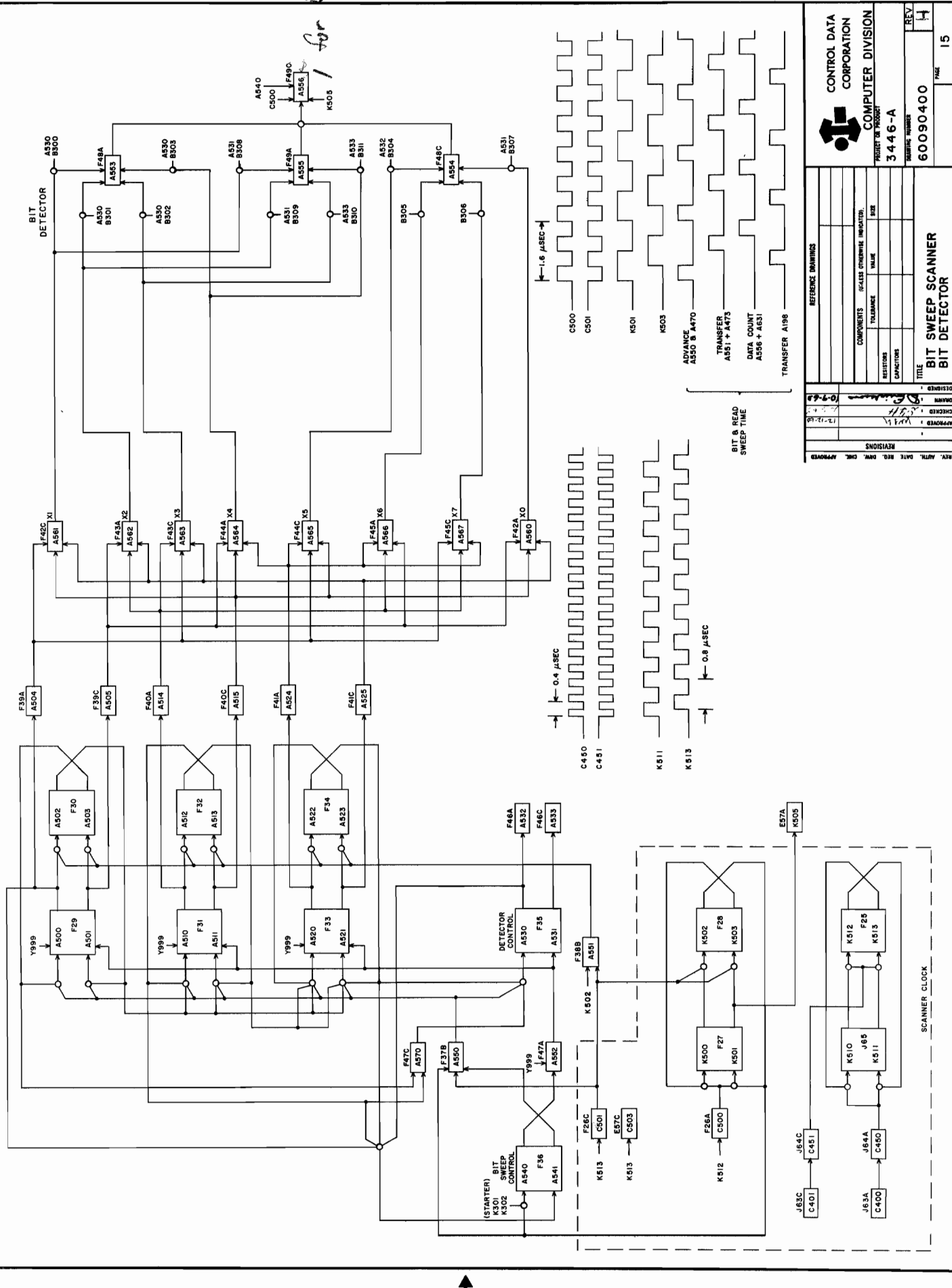
Outputs from the scanner are fed to the Bit Detector, which recognizes "1" bits from the Data Translator (B300-B311) and produces, for each such "1" bit, an output from A556 coincident with timing pulses from the 2.5 mc clock.

TERM	LOCATION	PAGE	DEFINITION
B300	D27A	13	Data Translator
B311	D30C	13	Data Translator
K301	H50	5	Starter
K302	E64C	5	Starter Pulse

REFERENCE DRAWINGS	
COMPONENTS	SEELED PROGRAMME INDICATOR.
TOLERANCE	VALUE
RESISTORS	SIZE
CAPACITORS	VALUE

DESIGNED BY	
DRAWN	
CHECKED	
APPROVED	
REVISIONS	
REV.	DATE
BY	APP.

TITLE	
BIT SWEEP SCANNER	
BIT DETECTOR	



317

for

BIT COUNTER

Each output from A556 (Page 15) advances the first rank of the 10-stage Bit Counter. The modulus of this counter is 1024, but the count never exceeds 960 since that is the maximum number of bits which can be stored in memory for one card image. Note that the Bit Counter has advance inputs for both the bit count (A556) and the hole count (A631). This is because the counter is also used to count the holes in the punched card during the Read Check (Compare) phase. This is referred to, for convenience, on the functional block diagram as the Hole Counter.

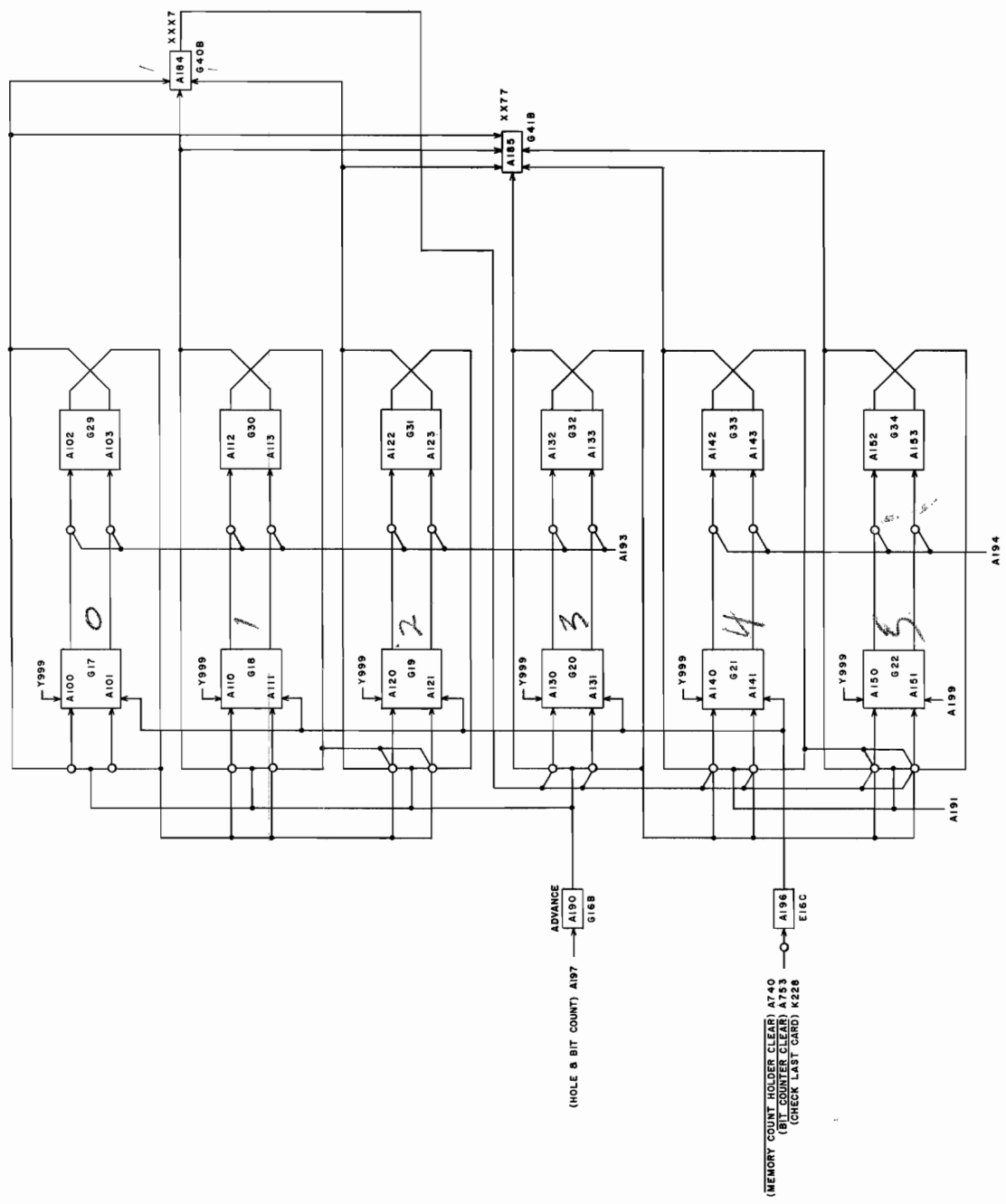
The inputs which clear the Bit Counter (via A199 and A196) are found on Page 19 and can better be understood after examining the logic on that page.

** DURING LOAD FUNCTION, BIT COUNTER COUNTS # OF HOLES TO BE PUNCHED*

** DURING READ CHECK THIS COUNTS HOLES.*

TERM	LOCATION	PAGE	DEFINITION
A191	G26B	19	Count
A193	G28B	19	Transfer
A194	G39A	19	Transfer
A197	G43A	19	Hole and Bit Count
A198	G27C	19	Count
A740	H63A	21	Memory Count Holder Clear
A753	H60C	21	Bit Counter Clear
K228	J63A	9	Check Last Card

REFERENCE DRAWINGS	
COMPONENTS	UNLESS OTHERWISE INDICATED
TOLERANCE	VALUE
RESISTORS	SIZE
CAPACITORS	VALUE
TITLE BIT COUNTER (PART 1)	



REV.	DATE	BY	CHK.	APP.	REVISIONS
1	12-14-55				
2	1-17-56				
3	7-17-56				
4	10-17-56				
5	12-14-56				
6	1-17-57				
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100	1-17-57				

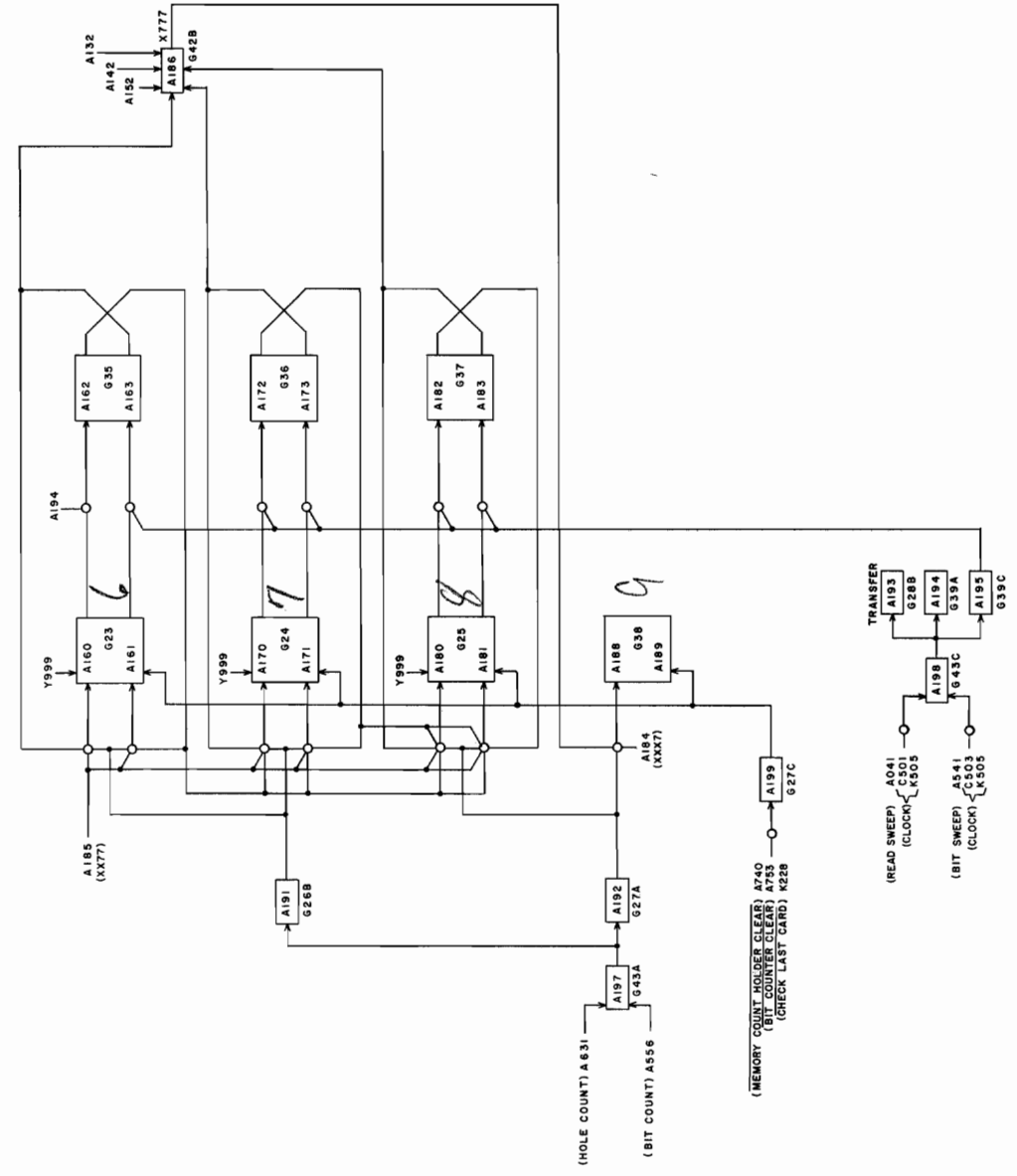
TERM	LOCATION	PAGE	DEFINITION
A041	B89	41	Read Sweep Control
A132	G32	17	Bit Counter
A142	G33	17	Bit Counter
A152	G34	17	Bit Counter
A184	G40B	17	XXX7
A185	G41B	17	XXX7
A541	F36	15	Bit Sweep Control
A556	F49C	15	Bit Detector
A631	B85C	35	Hole Detector
A740	H63A	21	Memory Count Holder Clear
A753	H60C	21	Bit Counter Clear
C501	F26C	15	Clock
C503	E57C	15	Clock
K228	J23A	9	Check Last Card
K505	E57A	15	Clock

FORM 510

CONTROL DATA CORPORATION		COMPUTER DIVISION	
PROPERTY OR PRODUCT		3446-A	
DRAWING NUMBER		6090400	
REV		G	
DATE		19	

DESIGNED	10-9-63
CHECKED	12-12-63
APPROVED	1-2-64
REVISIONS	

REFERENCE DRAWINGS	
COMPONENTS (UNLESS OTHERWISE INDICATED)	
TOLERANCE	VALUE
RESISTORS	
CAPACITORS	
TITLE	BIT COUNTER (PART 2)



REV. DATE, DATE REC. ORK. CHK. APPROVED

DESIGNED BY: E.M.C.

CHECKED BY: H.C.

APPROVED BY: H.C.

REVISIONS

DATE

BY

DESCRIPTION

TERM	LOCATION	PAGE	DEFINITION
A040	B89	41	Stop Read Sweep Scanner
A043	B90	41	Stop Read Sweep Scanner
A101	G17	17	Bit Counter
A120	G19	17	Bit Counter
A130	G20	17	Bit Counter
A140	G21	17	Bit Counter
A150	G22	17	Bit Counter
A160	G23	19	Bit Counter
A170	G24	19	Bit Counter
A180	G25	19	Bit Counter
A181	G25	19	Bit Counter
A188	G38	19	Bit Counter
A189	G38	19	Bit Counter
E021	J35	31	Unload Memory Rank 1
E031	J37	31	Unload Memory Rank 1
J033	H34A	5	Function
J034	I64A	5	Data
J082	H45B	5	Time 2
K004	H37	5	Timing Chain (Time One)
K013	H52	7	Reserve
K033	H36	7	Timing Chain (Time One)
K228	J23A	9	Check Last Card
M504	F88B	29	Resume Clear
N041	E48B	5	Master Clear
N042	E156	5	Master Clear
S519	F74	29	Data Lockout
S530	F72A	29	Data Lockout
S540	J21C	29	Data Lockout
S541	J14A	29	Data Lockout
S548	J68C	29	Punch Resume
S539	J21A	29	Data Lockout

FORM 510

BIT COUNT HOLDER

The Bit Count Holder is a ten-stage, double-rank register which holds the bit counts for two card images. The first rank (memory count holder) is filled with the count from card image #1 just before the memory, which contains that card image, is unloaded (first card is punched). At the conclusion of the Unload Memory phase, this count is moved to Rank 2 (previous memory count holder) to make room for the count from card image #2. What happens to the count in Rank 2 is discussed under the Compare Network.

Information is transferred into, and within, the count holder in the following manner: Before loading memory with the first card image, a Master Clear clears A768/769. Upon receipt of the first data signal, A740 goes to a "0" at Time 1, and reverts to a "1" again when A768/769 is set at Time 2. This "0" pulse clears Rank 1 through A294 and the Bit Counter through A196 and A199 (see Pages 17 and 19). Upon completion of Load Memory, the Data Lockout FF (Page 29) is set, setting the Memory Count Control FF A750/751. The 5 usec pulse produced before A750/751 is cleared transfers information from the Bit Counter to Rank 1.

COMPARE NETWORK

At the completion of Unload Memory, the Comparison Control FF A760/761 is set. (The A040 and A043 inputs to set this FF come up at different times, relative to the punch cycle, for the 415 and IBM punches. This is explained in detail under the discussion of the Read Sweep Scanner (Page 38). Suffice it to say that the Comparison Control FF will be set sometime after Unload Memory has been completed.) At this point, when A760 = "0", and A763 has not yet become a "1", the disabling inputs to A702 are down for 5 usec. Any disparity between the Bit Counter (in this phase, the Bit Counter is used to record the number of holes in the card just punched) and Rank 2, which contains a record of the holes that should have been punched in that card, will disable the AND input to A702, permitting the Check Error FF to set. Later, as A760/761 is cleared, concurrent Clear and Transfer pulses are issued to Rank 2. The Clear pulse lasts

0.8 usec, the Transfer pulse lasts 5 usec (until A762/763 is cleared). The 0.8 usec pulse (A764) is also used to clear the Bit Counter by forcing A753 to a "0".

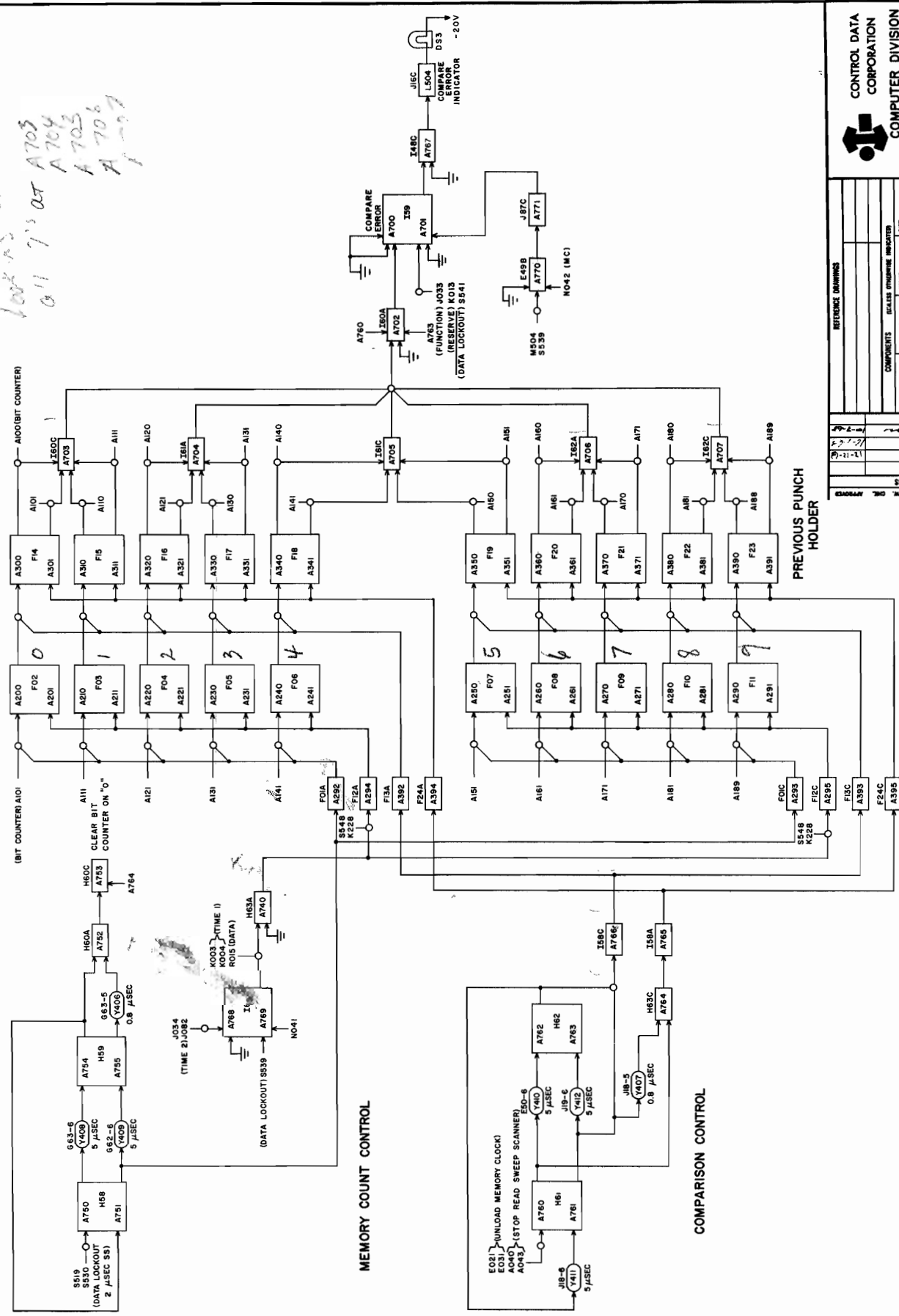
The Punch Resume signal also comes up at the end of the Unload Memory (punch) cycle. After approximately 800 usec, S548 (Page 29) goes to a "0" for 4 usec. This produces a clearing pulse for Rank 1 of the Bit Count Holder, permitting it to accept a new count. At the same time, S537 sets the Write Resume FF (S504/505) causing a 2 usec pulse which clears the data lockout. This permits the Start FF, which had been previously set by the data signal accompanying the first byte of the second card image, to start the timing chain. (During the Unload Memory sequence, the Timing Chain does not operate.)

COMPARE NETWORK

As soon as the Read Sweep Scanner has completed its excursion for the last card row, the Comparison Control FF (A760/761) is set. This removes the restraining OR input to A702 and, for a 5 usec period (determined by delay Y410), A702 is free to set the Compare Error FF, providing a disagreement is found between any stage in the previous memory count holder and the corresponding stage of the Bit Counter. The Set output of each Rank 2 FF is ANDed with the Clear output of the Bit Counter FF, and vice versa; any satisfied AND forces the output of its comparison network element (A703-A707) to a "0", thereby breaking the AND input to A702.

After another 5 usec, Y411 clears A760/761, and simultaneous Clear and Transfer pulses to Rank 2 are generated, as explained in paragraph 3 of the Bit Count Holder discussion. At first appearance, it would appear that the 0.8 usec pulse from A764 to clear the Bit Counter is redundant, inasmuch as the Bit Counter is again cleared at the start of the next Load Memory cycle (Time 1 input to A740). The pulse is important when checking the last card, however, since at that time no more data is to be delivered, the data signal does not come up, and the Timing Chain can not start. In this case, the A764 pulse clears the counter through A753, thereby preparing it for the last-card hole count.

LOOK AS OF
 011 7:30 P
 A 703
 A 704
 A 703
 A 706



CONTROL DATA CORPORATION		COMPUTER DIVISION	
PROJECT OR PRODUCT		3446-A	
DRAWING NUMBER		60090400	
REV		U	
PAGE		21	

REV.	DATE	BY	CHK.	APPROVED

REVISIONS	DESCRIPTION

COMPONENTS	QUANTITY	VALUE	USE

RESISTORS	CAPACITORS

REFERENCE DRAWINGS

BIT COUNT HOLDER & COMPARE NETWORK

MEMORY

The memory section consists of a 12 x 80 array of magnetic cores having a capacity of 960 bits. This array corresponds to the column-row coordinates on standard 80-column punched cards.

Each core is threaded by four wires (Page 25): a column half-write, a row half-write, a row read, and a column sense. The physical orientation of each core with respect to its set of 4 wires is the same throughout the memory.

Coincident currents of 185 ma (half-write) for about 11 μ sec are used to write information into memory. Memory is unloaded by a read current peak of 1.2 amp, decreasing to 370 ma for a 4 μ sec duration. Selected cores are forced to a "1" during Write (Load Memory), and returned to "0" during Read (Unload Memory).

LOAD MEMORY COUNTER

Memory is loaded on a 12-bit column-by-column basis. Columns are selected by a 7-stage, double-rank, mod-120₈ Load Memory Counter which is advanced at Time 4 of each Timing Chain cycle, providing the Write signal from the data channel is up. The Rank 1 to Rank 2 transfer occurs at Time 2. The counter is cleared through N050 whenever the Write line drops (J018 = 0), or whenever the data lockout is set (S530 = 0). The last case occurs when the counter reaches 120₈, as evidenced by both C060/061 and C040/041 being in the set state.

TERM	LOCATION	PAGE	DEFINITION
J018	H33A	5	Write
K022	H43C	5	Connect
K025	H44C	5	Timing Chain Time 4
K026	H34C	5	Timing Chain Time 2
S530	F72A	29	Data Lockout

80₁₀

REVISIONS

NO.	DATE	BY	CHK.	APP.	REASON
1					
2					
3					
4					
5					
6					

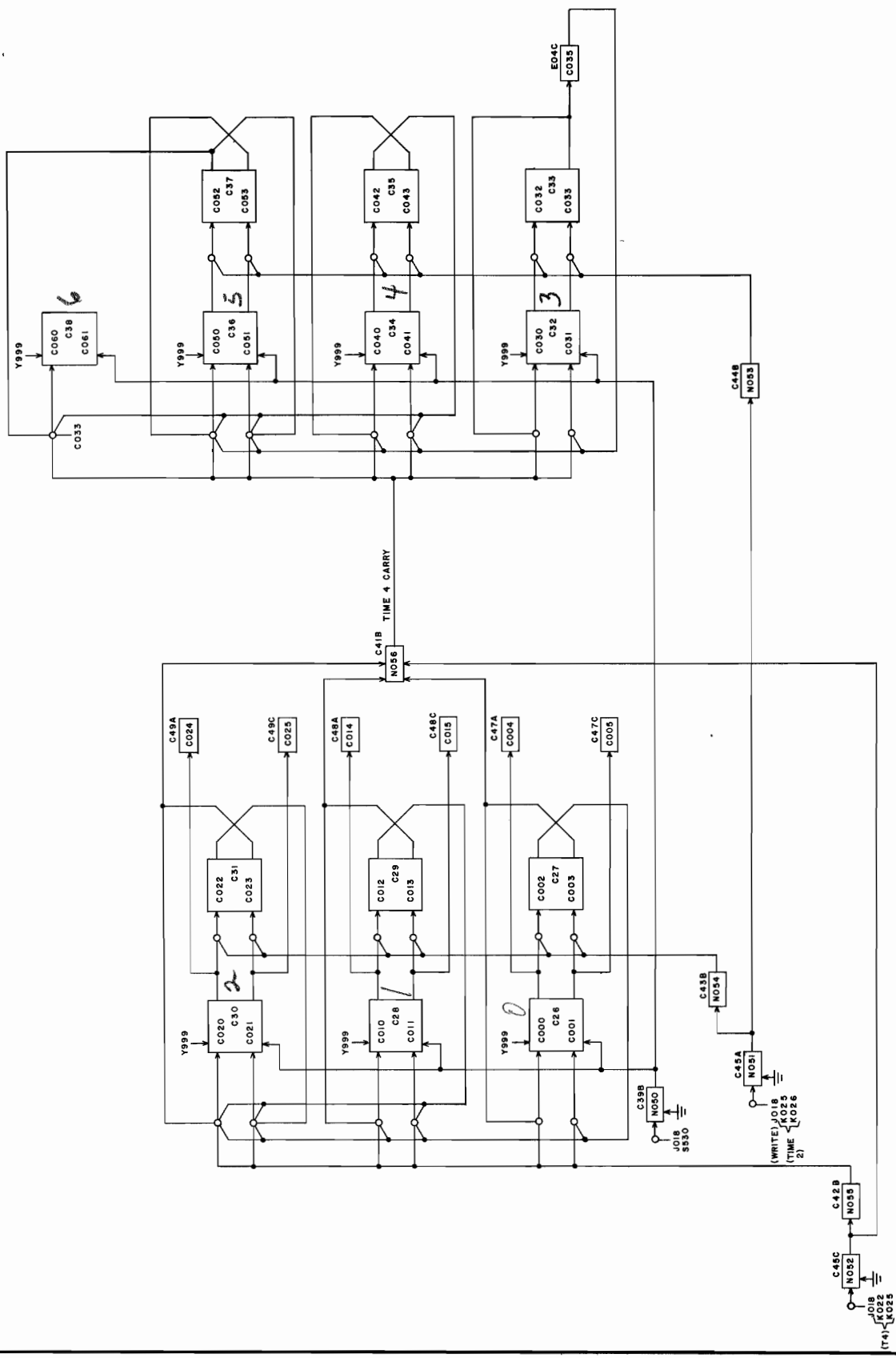
REFERENCE DRAWINGS

DRAWING NO.	TITLE

COMPONENTS (UNLESS OTHERWISE INDICATED)

COMPONENTS	VALUE	SIZE
RESISTORS		
CAPACITORS		

LOAD MEMORY COUNTER



DRIVE LINE SELECTION

Ten diverters (D020-D029) and eight drive generators (G020-G027) are controlled by outputs from the Load Memory Counter. During the Write process these diverters and generators sequentially select each column wire, energizing it with a column half-write current of 185 ma. Simultaneous with the selection of each column wire, the Data Translator outputs feed the row generators (G000-G011), producing row half-write currents of 185 ma in the row wires corresponding to "1" bits in that column of memory. Row wire circuits are completed through diverters D040 and D041. The combination of row and column half-write currents is sufficient to switch the selected cores from the "0" state to the "1" state.

Data Translator outputs are available from Time 2 to Time 4; this assures that row information has stabilized when the diverters and generators are turned on at Time 3 (via N057).

Consider the selection of the digit 3 in column 74: When the Load Memory counter reaches 73 (111_g), D029 (count 11X) and G021 (count XX1) are selected, thereby energizing column wire 74. At the same time, row generator G006 energizes row wire 3. (The disparity between the counter value and the selected column wire results from the controller being designed so as to make the memory column numbers consistent with the column numbers on the punched card.)

Note that the selected core (column 74, row 3) is not in the same coordinate location with respect to the matrix, as it will be with respect to the card when that hole is punched. This is because an interlacing scheme, such as is shown by the drive lines connected to generator G020, is used which facilitates physical connections of the select wires to the matrix.

An unusual timing consideration is present during the Load Memory phase. The Bit Sweep Scanner (Page 1b) is turned on during each Load Memory cycle (A540 = 0). This has the effect of prolonging Time 3 until the Bit Sweep Scanner has swept all 12 bit positions. At a 0.625 mc rate, this is approximately 19 μsec. Adding this value to the 1 μsec from Y004, the total Time 3 period becomes 20 μsec. This delay affects only the Load Memory phase. During Connect and Function timing cycles, Time 3 is still approximately 1 μsec. The Bit Sweep Scanner inputs to N057 shorten the time the drive lines are energized from this 20 μsec value to about 11 μsec (1.6 x 7).

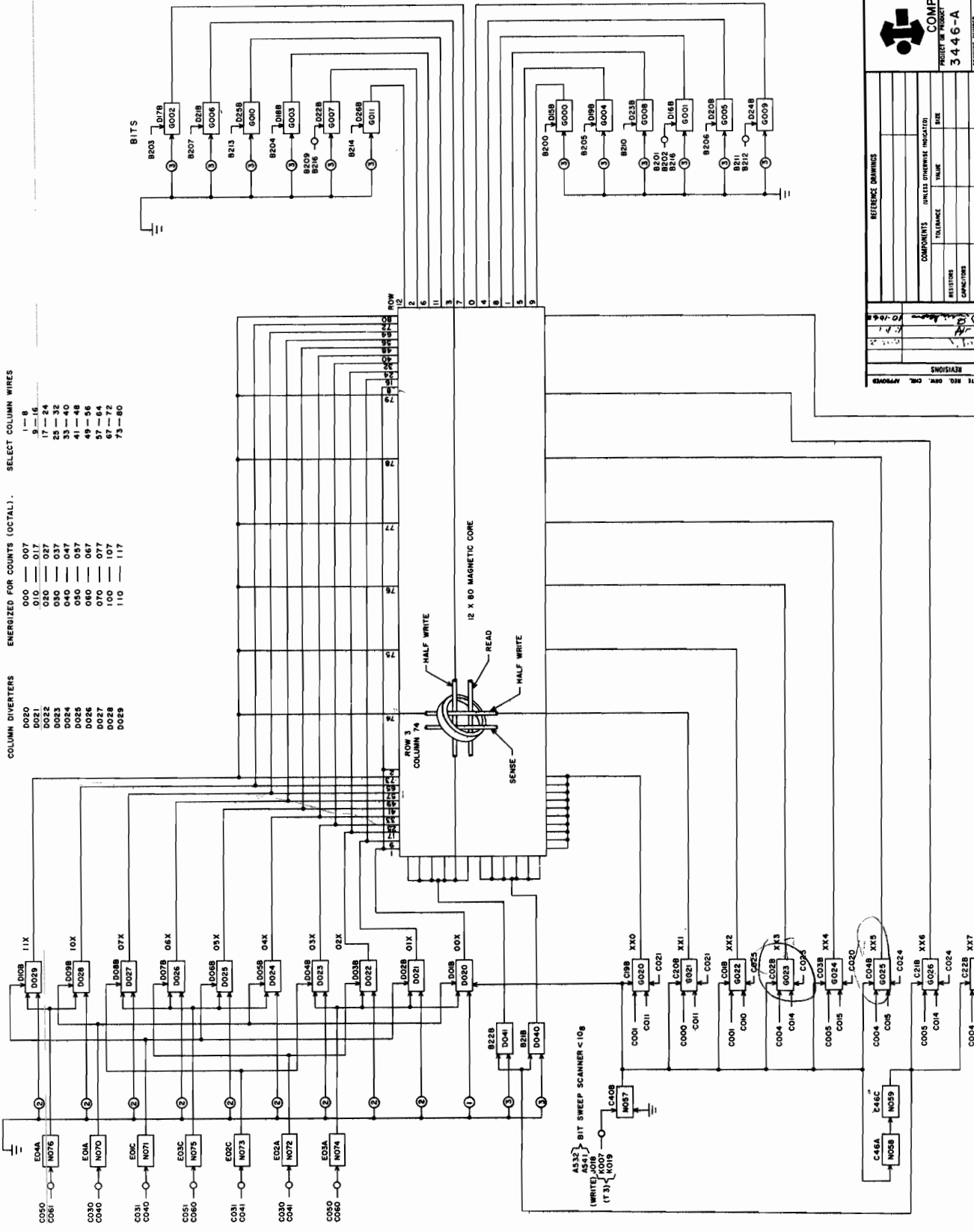
TERM	LOCATION	PAGE	DEFINITION
A532	F46A	15	Detector Control
A541	F36	15	Bit Sweep Control
B200	D31A	13	Data Translator
B216	D39C	13	Data Translator
C000	C26	23	Load Memory Counter Rank I
C001	C26	23	Load Memory Counter Rank I
C004	C47A	23	Load Memory Counter Rank II
C005	C47C	23	Load Memory Counter Rank II
C010	C28	23	Load Memory Counter Rank I
C011	C28	23	Load Memory Counter Rank I
C014	C48A	23	Load Memory Counter Rank II
C015	C48C	23	Load Memory Counter Rank II
C030	C32	23	Load Memory Counter
C031	C32	23	Load Memory Counter
C040	C34	23	Load Memory Counter
C041	C34	23	Load Memory Counter
C050	C36	23	Load Memory Counter
C051	C36	23	Load Memory Counter
C060	C38	23	Load Memory Counter
C061	C38	23	Load Memory Counter
J018	H33A	5	Write
K007	H38	5	Timing Chain
K019	H43A	5	Connect

FORM 810

COLUMN DIVERTERS
 0020
 0021
 0022
 0023
 0024
 0025
 0026
 0027
 0028
 0029

ENERGIZED FOR COUNTS (OCTAL).
 00 — 007
 01 — 016
 02 — 027
 03 — 037
 04 — 047
 05 — 057
 06 — 067
 07 — 077
 10 — 107
 11 — 117

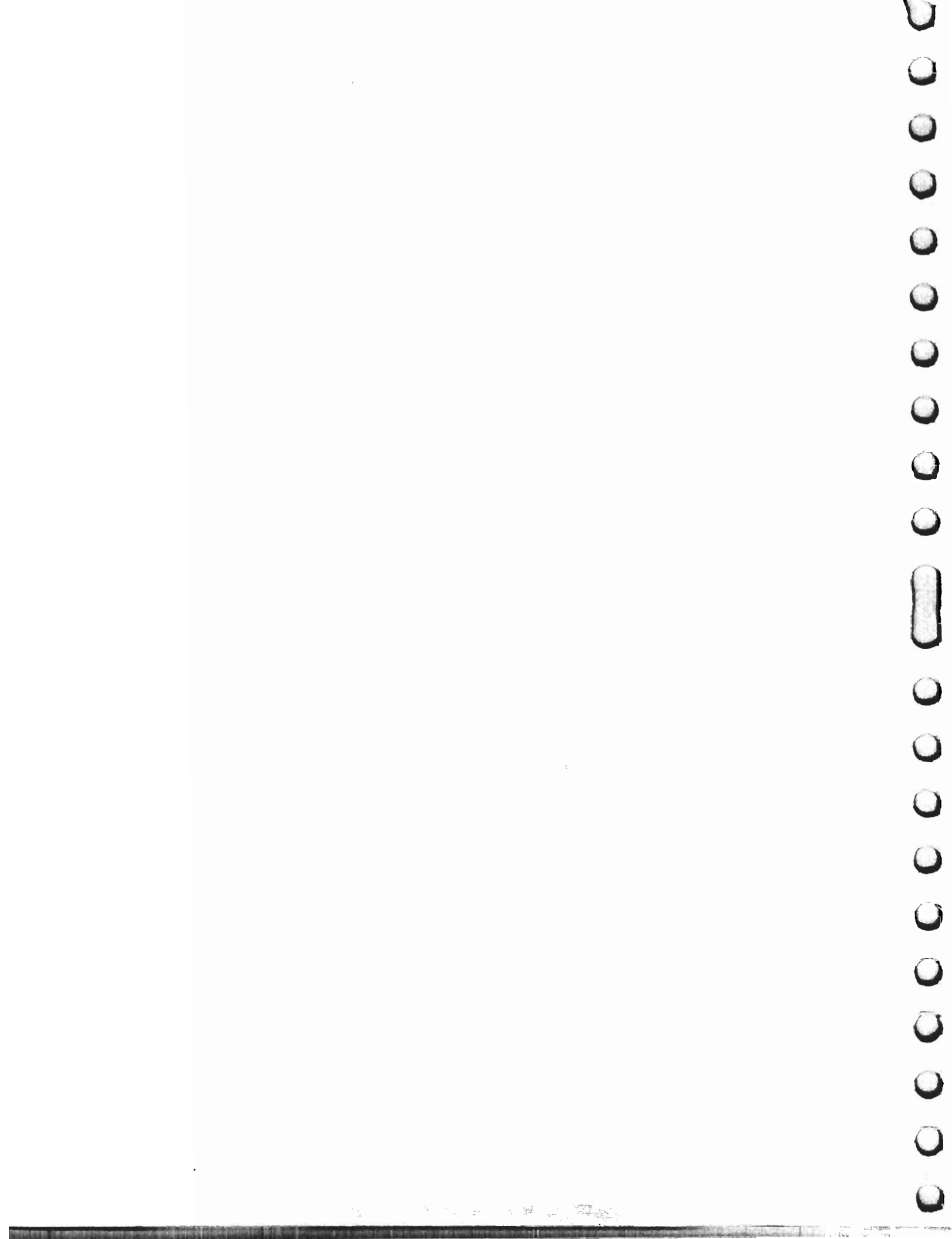
SELECT COLUMN WIRES
 1 — 8
 9 — 16
 17 — 24
 25 — 32
 33 — 40
 41 — 48
 49 — 56
 57 — 64
 65 — 72
 73 — 80

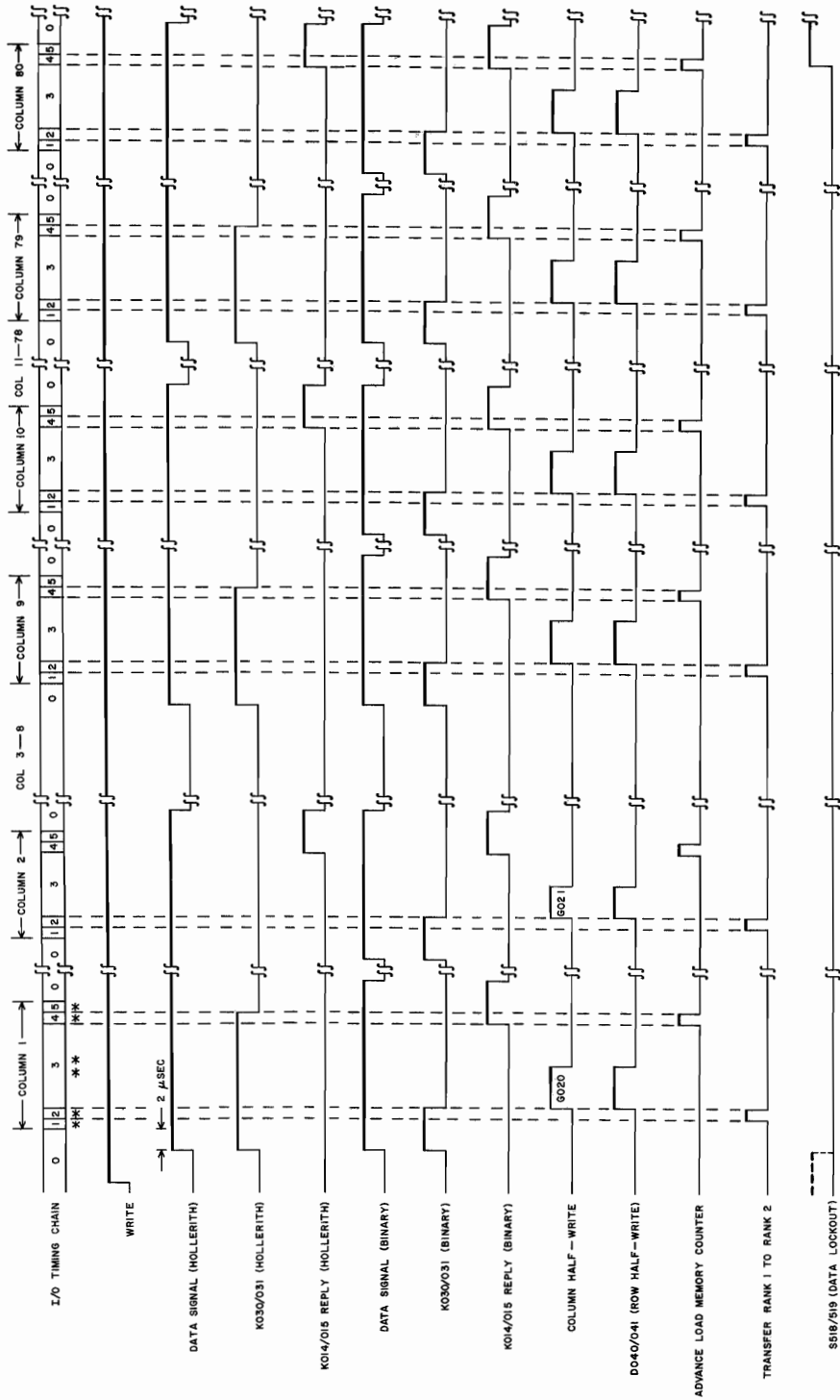


CONTROL DATA CORPORATION
 COMPUTER DIVISION
 PROJECT OR PRODUCT
 3446-A
 PARTIAL NUMBER
 60090400
 REV. 25

REFERENCE DRAWINGS
 COMPONENTS (UNLESS OTHERWISE INDICATED)
 TOLERANCE VALUE SIZE
 RESISTORS CAPACITORS
 TITLE
 DRIVE LINE SELECTION

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]
 REV. APR. 1957 REV. MAY 1957 REV. JUN 1957





* 1, 12, 14, 15 = 0.8 μSEC NOMINAL
 ** 13 = APPROXIMATELY 20 μSEC, BUT HALF-WRITE CURRENTS FLOW FOR JUST 11 μSEC (SEE TEXT)

UNLOAD MEMORY (PUNCH) CONTROL

The Unload Memory phase is initiated by the circuits shown on Page 29. The punch control FFs are in the following states prior to the start of a Punch cycle:

- 1) Row Pulse I FF (S500/501) - cleared
- 2) Row Pulse II FF (S502/503) - set
- 3) Write Resume FF (S504/505) - set
- 4) Punch Control FF (S506/507) - cleared
- 5) Data Lockout FF (S518/519) - cleared
- 6) Ready FF (S526/527) - set
- 7) Check Last Card FFs (K214/215 and 216/217) - cleared

With the exception of the Ready FF, the initial conditions established in the Control FFs are the result of a Master Clear signal (power turn-on or computer console pushbutton) or completion of a normal punch cycle (12 rows of memory unloaded). The Ready FF is set (and remains set) when the card punch is turned on, and the controller is in the Ready condition (Punch Ready, Punch Resume and Fall to Feed signals are up).

As soon as memory is loaded, the data lockout is set, completing the set input to the Punch Control FF. All inputs to L503 are now "0", and P500, which requires a -16v input for operation, starts the punch. (Setting the data lockout has already energized relay K1. When using IBM punches, contacts 9-10 of K1 are used to close intermediate relays in the punch cabinet, thereby enabling the punch magnet circuits. These contacts are not used with the 415 Punch.) Once the punch has started, the Punch Resume line drops.

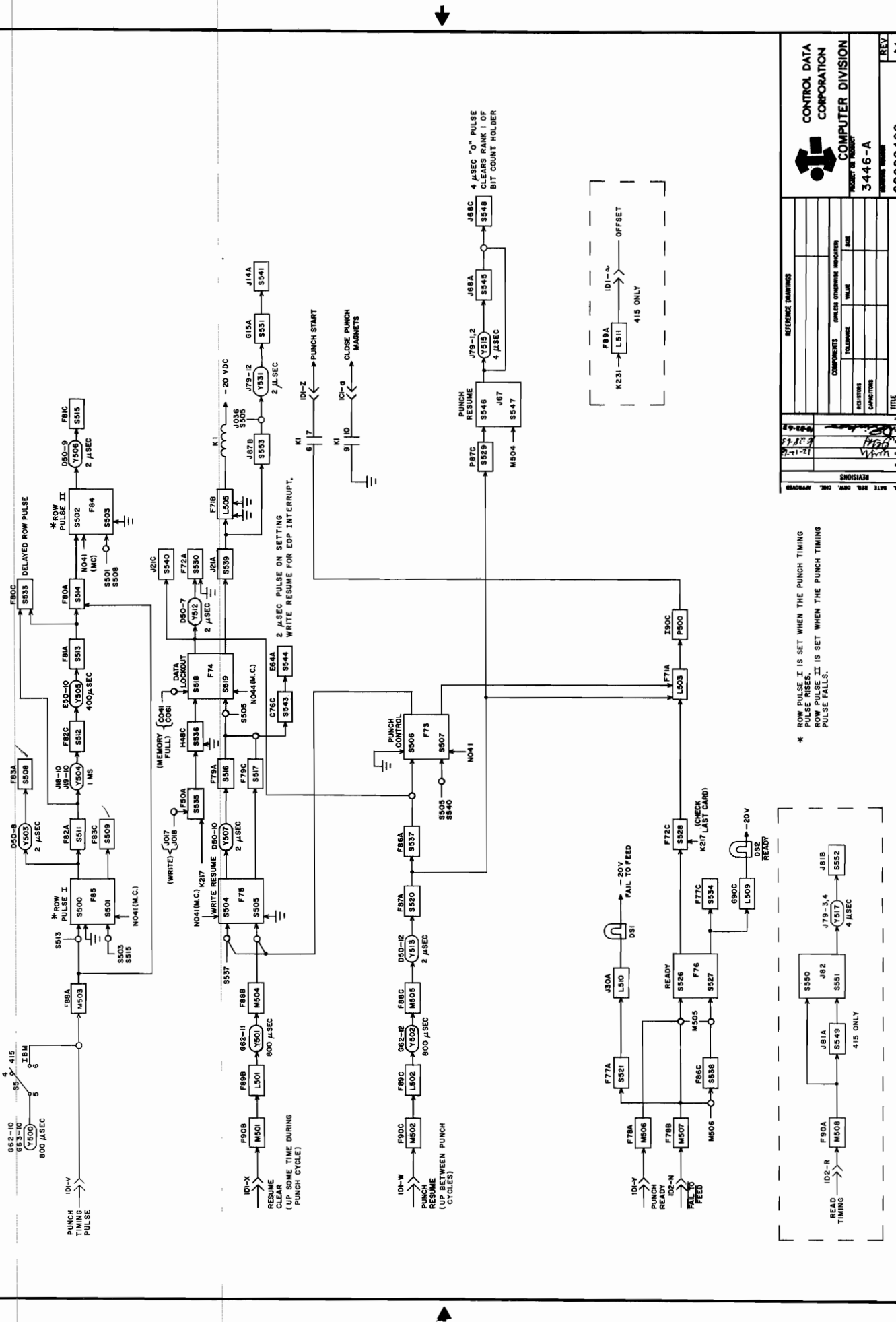
A series of timing pulses, corresponding to the 12 rows on a card, are generated by the punch unit during each punch cycle. Three pulses denote when the punch magnets must be pulled and the read brushes strobed. In the 415 Punch, each of the 12 Punch Timing (Punch Row) pulses is followed by a Read Timing (Read Row) pulse. In the IBM punches, one set of timing pulses serves for both punch and read; each is called a row pulse. (See the punch timing chart on Page 45.) In the following explanation, the word "row pulse" refers to the pulse which performs the Punch Timing function.

Each row pulse entering the controller starts a sequence to unload one memory row. The first row pulse from the punch unit sets the Row Pulse I FF S500/501. After 400 μ sec, the set input to the Row Pulse I FF is blocked because the output of S513 changes to "0". The two delay terms, Y504 and Y505, are used to trap erratic pulses in the timing pulses from the punch. These delays then prevent stray pulses from starting a new sequence of control, before the current card row has been punched, by inhibiting the setting of the Row Pulse FFs S500/501 and S502/503 until the delay is complete. The set output from Row Pulse I FF provides a 2 μ sec pulse which, in addition to clearing the Row Pulse II FF, clears the 80-FF Hole Detector (Page 35) and initiates the Unload Memory phase (Page 31).

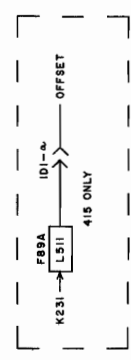
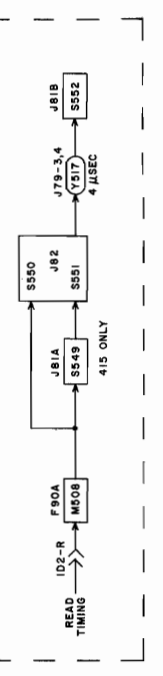
As each row pulse signal drops, S514 sets Row Pulse II FF. The set output of this FF is connected as a 2 μ sec pulse to clear Row Pulse I FF. Sometime during the punch cycle, the Resume Clear line comes up, clearing the Write Resume FF. After the punch cycle has been completed, the Punch Resume line comes up, permitting M505 to sample the Ready and Fall to Feed lines in order to determine whether or not to clear the Ready FF.

After a 2 μ sec delay (Y513), the Write Resume FF is again set, clearing the data lockout. With the data lockout cleared, S531 drops the Punch Busy status line (Page 11) if the channel becomes Not Busy (J036). At this time, if the Ready FF is set, an interrupt on Ready and Not Busy signal is sent to the data channel if that function has been selected. The Clear output from the data lockout is ANDed with the set output from Write Resume to clear the Punch Control. The Punch Control FF restores a "1" input to L503, turning off the Punch Start line. The Punch Control FFs are now in the same conditions as stated previously, and are ready to start a new punch cycle when the memory is again loaded.

TERM	LOCATION	PAGE	DEFINITION
C041	C34	23	Counter Carry Rank I
C061	C38	23	Counter Carry Rank I
J017	H32C	5	Write
J018	H33A	5	Write
J036	J42A	5	Channel Busy
K217	G13	9	Check Last Card
K231	J83	9	Check Last Card
N041	E48B	5	Master Clear
N044	J88A	5	Master Clear



* ROW PULSE I IS SET WHEN THE PUNCH TIMING PULSE RISES.
 * ROW PULSE II IS SET WHEN THE PUNCH TIMING PULSE FALLS.



CONTROL DATA CORPORATION		COMPUTER DIVISION	
PROJECT NO. 3446-A		REV. M	
DATE 60090400		PAGE 29	
TITLE PUNCH (UNLOAD MEMORY) CONTROL			
DESIGNED BY [Signature]			
CHECKED BY [Signature]			
APPROVED BY [Signature]			
REV. APRIL 1961 DATE REV. APR. 1961 APPROVED BY [Signature]			
REVISIONS			
NO.	DESCRIPTION	DATE	BY
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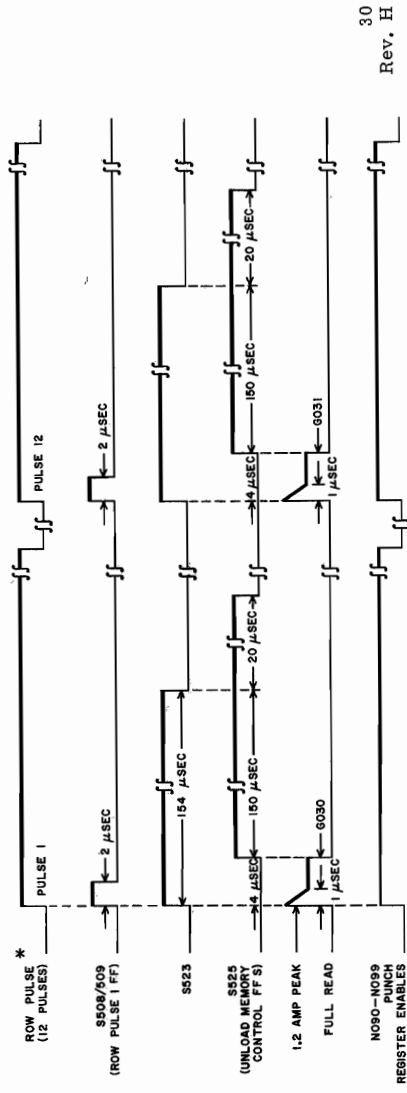
UNLOAD MEMORY

The 2 μ sec pulse resulting from the setting of Row Pulse 1 FF (Page 29) sets the Unload Memory Counter Control FF S522/523. Since the counter had been cleared by a previous Time 3 pulse from the Timing Chain, the input to N079 is satisfied, driving that element to "0". This makes all inputs to row generator G030 "0's", thereby selecting the row 9 read wire. The Read pulse lasts until S524/525 is set 4 μ sec later, which in turn causes N079 to revert to a "1". After 150 μ sec, S522/523 is cleared allowing N081 to advance the counter. When S524/525 is cleared 20 μ sec later, N084 initiates a 20 μ sec delay, after which the count is transferred from Rank 1 to Rank 2.

At the next row pulse, the counter holds a count of 1, all inputs to G031 are down, and row wire 8 is energized for 4 μ sec. This sequence repeats until all 12 rows in memory have been probed. Diverters D030 and D031 complete the read row wire circuits.

At the start of the punch cycle, and between each row pulse thereafter, all stages of the Punch register are held to "1" by the Punch Register Enable inputs (N090-N099). At this time, the sense amplifier outputs are "1's".

As the read current forces all cores in a row to "0", a 47 mv signal is generated on the sense line for each column where the selected core changed from a "1" to a "0". This signal drives the associated sense amplifier to "0". Because the Punch Register Enables are down (at the time of the Read pulse), "0's" are stored in those stages of the register where the sense lines recognized a change in the state of the core. Thus the relatively short burst of energy felt on the sense line is prolonged for the duration of the row pulse. The attendant -16v outputs from the output amplifiers (L011 - L080) energize the corresponding punch magnet pullers, P001 - P080.




* REFER TO TIMING CHART FOR APPLICABLE PUNCH. THIS WILL GIVE THE LENGTH OF EACH PUNCH PULSE AND THE LENGTH OF TIME TO COMPLETE A PUNCH CYCLE. EVERY PUNCH PULSE IS CARRIED OUT AT THE SAME TIME IN RELATION TO TIME AFTER PUNCH PULSE 12 THERE IS A DELAY WHILE THE NEXT CARD IS ENTERING THE PUNCH.

TERM	LOCATION	PAGE	DEFINITION
N059	C46C	25	Bit Sweep Scanner
S500	F85	29	Row Pulse
S508	F83A	29	Row Pulse I
S509	F83C	29	Row Pulse I
S548	J68C	29	Punch Resume



Card Col num	Sense Amplifier Sym. Loc.	Punch Register Loc. Sym.	Output Amplifier Sym. Loc.	Punch Magnet Pulser Sym. Loc.	Output Cable Pin Number	Card Col num	Sense Amplifier Sym. Loc.	Punch Register Loc. Sym.	Output Amplifier Sym. Loc.	Punch Magnet Pulser Sym. Loc.	Output Cable Pin Number	
1	S001 B01A	H001 B25A	C50A L001	G64A P001	H64A	41	S041 B11A	H041 B45A	H141 C63B	L041 G77B	P041 H80B	IB1-X
2	S002 B01B	H002 B25C	C50B L002	G64B P002	H64B	42	S042 B11B	H042 B45C	L042 G77C	P042 H80C	IB1-Y	IB1-Y
3	S003 B01C	H003 B26A	C50C L003	G64C P003	H64C	43	S043 B11C	H043 B46A	L043 G78A	P043 H66A	IC1-A	IC1-A
4	S004 B01D	H004 B26C	C51A L004	G65A P004	H66A	44	S044 B11D	H044 B46C	L044 G78B	P044 H66B	-B	-B
5	S005 B02A	H005 B27A	C51B L005	G65B P005	H66B	45	S045 B12A	H045 B47A	L045 G79A	P045 H66C	-C	-C
6	S006 B02B	H006 B27C	C51C L006	G65C P006	H66C	46	S046 B12B	H046 B47C	L046 G79B	P046 H68A	-D	-D
7	S007 B02C	H007 B28A	C52A L007	G66A P007	H68A	47	S047 B12C	H047 B48A	L047 G79B	P047 H68B	-E	-E
8	S008 B02D	H008 B28C	C52B L008	G66B P008	H68B	48	S048 B12D	H048 B48C	L048 G79C	P048 H68C	-F	-F
9	S009 B03A	H009 B29A	C52C L009	G66C P009	H68C	49	S049 B13A	H049 B49A	L049 G80A	P049 H70A	-H	-H
10	S010 B03B	H010 B29C	C53A L010	G67A P010	H70A	50	S050 B13B	H050 B49C	L050 G80B	P050 H70B	-J	-J
11	S011 B03C	H011 B30A	C53B L011	G67B P011	H70B	51	S051 B13C	H051 B50A	L051 G80C	P051 H70C	-K	-K
12	S012 B03D	H012 B30C	C53C L012	G67C P012	H70C	52	S052 B13D	H052 B50C	L052 G81A	P052 H72A	-L	-L
13	S013 B04A	H013 B31A	C54A L013	G68A P013	H72A	53	S053 B14A	H053 B51A	L053 G81B	P053 H72B	-M	-M
14	S014 B04B	H014 B31C	C54B L014	G68B P014	H72B	54	S054 B14B	H054 B51C	L054 G81C	P054 H72C	-N	-N
15	S015 B04C	H015 B32A	C54C L015	G68C P015	H72C	55	S055 B14C	H055 B52A	L055 G82A	P055 H74A	-P	-P
16	S016 B04D	H016 B32C	C55A L016	G69A P016	H74A	56	S056 B14D	H056 B52C	L056 G82B	P056 H74B	-R	-R
17	S017 B05A	H017 B33A	C55B L017	G69B P017	H74B	57	S057 B15A	H057 B53A	L057 G82C	P057 H74C	-S	-S
18	S018 B05B	H018 B33C	C55C L018	G69C P018	H74C	58	S058 B15B	H058 B53C	L058 G83A	P058 H76A	-T	-T
19	S019 B05C	H019 B34A	C56A L019	G70A P019	H76A	59	S059 B15C	H059 B54A	L059 G83B	P059 H76B	-U	-U
20	S020 B05D	H020 B34C	C56B L020	G70B P020	H76B	60	S060 B15D	H060 B54C	L060 G83C	P060 H76C	-V	-V
21	S021 B06A	H021 B35A	C56C L021	G70C P021	H76C	61	S061 B16A	H061 B55A	L061 G84A	P061 H78A	-W	-W
22	S022 B06B	H022 B35C	C57A L022	G71A P022	H78A	62	S062 B16B	H062 B55C	L062 G84B	P062 H78B	-X	-X
23	S023 B06C	H023 B36A	C57B L023	G71B P023	H78B	63	S063 B16C	H063 B56A	L063 G84C	P063 H78C	IC1-Y	IC1-Y
24	S024 B06D	H024 B36C	C57C L024	G71C P024	H78C	64	S064 B16D	H064 B56C	L064 G85A	P064 H80A	ID1-A	ID1-A
25	S025 B07A	H025 B37A	C58A L025	G72A P025	H80A	65	S065 B17A	H065 B57A	L065 G85B	P065 H80B	-B	-B
26	S026 B07B	H026 B37C	C58B L026	G72B P026	H80B	66	S066 B17B	H066 B57C	L066 G85C	P066 H80C	-C	-C
27	S027 B07C	H027 B38A	C58C L027	G72C P027	H80C	67	S067 B17C	H067 B58A	L067 G86A	P067 H82A	-D	-D
28	S028 B07D	H028 B38C	C59A L028	G73A P028	H82A	68	S068 B17D	H068 B58C	L068 G86B	P068 H82B	-E	-E
29	S029 B08A	H029 B39A	C59B L029	G73B P029	H82B	69	S069 B18A	H069 B59A	L069 G86C	P069 H82C	-F	-F
30	S030 B08B	H030 B39C	C59C L030	G73C P030	H82C	70	S070 B18B	H070 B59C	L070 G87A	P070 H84A	-H	-H
31	S031 B08C	H031 B40A	C60A L031	G74A P031	H84A	71	S071 B18C	H071 B60A	L071 G87B	P071 H84B	-J	-J
32	S032 B08D	H032 B40C	C60B L032	G74B P032	H84B	72	S072 B18D	H072 B60C	L072 G87C	P072 H84C	-K	-K
33	S033 B09A	H033 B41A	C60C L033	G74C P033	H84C	73	S073 B19A	H073 B61A	L073 G88A	P073 H86A	-L	-L
34	S034 B09B	H034 B41C	C61A L034	G75A P034	H86A	74	S074 B19B	H074 B61C	L074 G88B	P074 H86B	-M	-M
35	S035 B09C	H035 B42A	C61B L035	G75B P035	H86B	75	S075 B19C	H075 B62A	L075 G88C	P075 H86C	-N	-N
36	S036 B09D	H036 B42C	C61C L036	G75C P036	H86C	76	S076 B19D	H076 B62C	L076 G89A	P076 H88A	-P	-P
37	S037 B10A	H037 B43A	C62A L037	G76A P037	H88A	77	S077 B20A	H077 B63A	L077 G89B	P077 H88B	-R	-R
38	S038 B10B	H038 B43C	C62B L038	G76B P038	H88B	78	S078 B20B	H078 B63C	L078 G89C	P078 H88C	-S	-S
39	S039 B10C	H039 B44A	C62C L039	G76C P039	H88C	79	S079 B20C	H079 B64A	L079 G90A	P079 H90A	-T	-T
40	S040 B10D	H040 B44C	C63A L040	G77A P040	H90A	80	S080 B20D	H080 B64C	L080 G90B	P080 H90B	ID1-U	ID1-U



CONTROL DATA CORPORATION

TITLE UNLOAD MEMORY, SENSE AMPL TO PUNCH MAG TABLE	PART NO. 60090400
DRAWING NO. 3446-A	REV. NO. 33

HOLE DETECTOR

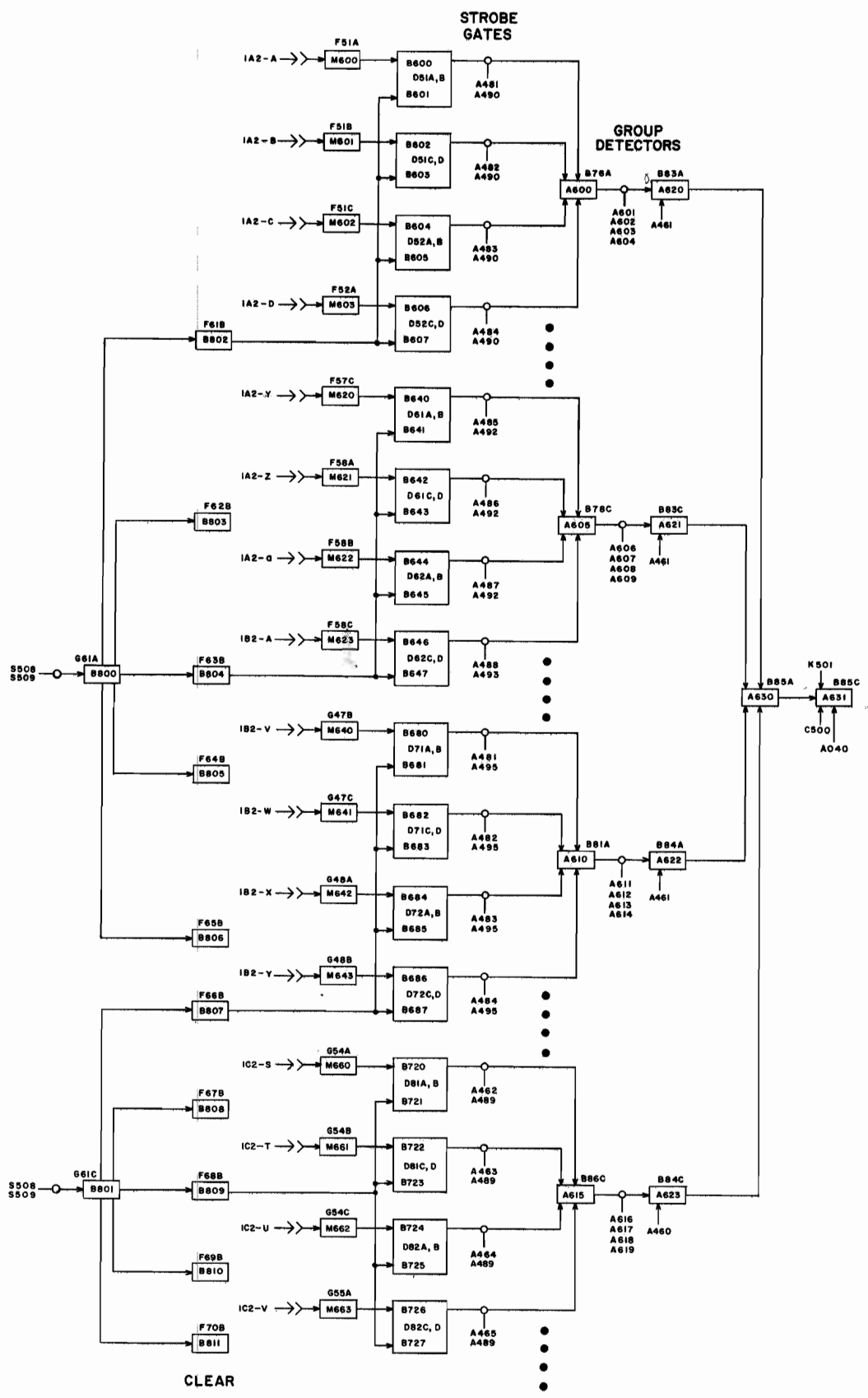
The 80 FFs which constitute the Hole Detector are cleared by a 2 μ sec pulse (S508/S509) occurring at the start of each punch row pulse. As the card passes under the read station, a hole in any column of the row being read allows that read brush to be grounded, thereby setting the corresponding column FF through its associated input amplifier (M600-M679). The states of the FFs are examined for each row by the strobe gates, which are sequentially enabled by outputs from the Read Sweep Scanner. Only the first four FFs in each group of 20 are shown on Page 35. Page 37 gives a complete listing of all 80 FFs and their logical connections.

During the strobe times, a hole (Set FF) causes the output from one of the 20 group detectors to go to "0", resulting in an output from A631 which advances the Bit Counter. (As previously stated, the Bit Counter is used to count holes, even though on the block diagram this function is called the Hole Counter.) Inputs K501 and C500 to A631 come from the scanner clock, while A040 comes from the Read Sweep Scanner. These inputs assure that A631 will produce an Advance pulse at the proper time.

The Read Sweep Scanner is shown on pages 39 and 41.

TERM	LOCATION	PAGE	DEFINITION
A040	B89	41	Read Sweep Control
A460	C89	41	Read Sweep Control
A461	C89	41	Read Sweep Control
A462	E58A	39	Read Sweep Scanner (XX1)
A463	E58C	39	Read Sweep Scanner (XX2)
A464	E59A	39	Read Sweep Scanner (XX3)
A465	E59C	39	Read Sweep Scanner (XX4)
A481	E72B	39	Read Sweep Scanner (XX1)
A482	E73B	39	Read Sweep Scanner (XX2)
A483	E74B	39	Read Sweep Scanner (XX3)
A484	E75B	39	Read Sweep Scanner (XX4)
A485	E76B	39	Read Sweep Scanner (XX5)
A486	E77B	39	Read Sweep Scanner (XX6)
A487	E78B	39	Read Sweep Scanner (XX7)
A488	E79B	39	Read Sweep Scanner (XX0)
A489	E80B	41	Read Sweep Scanner (X0X)
A490	E81B	41	Read Sweep Scanner (X0X)
A492	E83B	41	Read Sweep Scanner (X2X)
A493	E84B	41	Read Sweep Scanner (X3X)
A495	E86B	41	Read Sweep Scanner (X5X)
C500	F26A	15	Bit Sweep Control
K501	F27	15	Scanner
S508	F83A	29	Row Pulse I
S509	F83C	29	Row Pulse I

NOTE: HOLE DETECTOR LOGIC ONLY
 PARTIALLY ILLUSTRATED FOR
 AND IN TERMS SEE PAGE 37.





READ SWEEP SCANNER

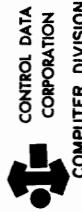
The Read sweep Scanner is a mod 128, 7-stage, double-rank counter which is advanced by the scanner clock as soon as the Read Sweep Control FF, A040/041, is set (Page 41). Read Sweep Control is set at one of two times, depending upon whether a CONTROL DATA 415 Punch or the IBM 523 or 544 punch is being used. When S5 is in the 415 position, A040/041 is set by the 4 μsec pulse (S550, S552) generated as the Read Timing signal from the 415 Punch drops. With S5 in the IBM position, A040/041 is set by the 2 μsec pulse (S505, S515) generated by the drop of the Punch Timing (Row pulse) signal from the IBM punch.

The advance and transfer times for the Read Sweep Scanner are shown on Page 15, inasmuch as they are identical to those for the Bit Sweep Scanner.

It is important to note that the Read Sweep Control FF is not cleared after a count of 80 (120), but by a count of 126 (A461 AND a count of X26g). The turnoff time is not actually important, so long as it is later than the strobe time for the last FF in the Hole Detector. The Strobe Gate inputs (Page 37) for card column 60 equal a count of 80 (74g); the inputs to column 61 (first strobe gate in the last FF group) are enabled, however, by a count of 65 (1018). The following table lists the theoretical and actual octal counts for strobing the last group of 20 Hole Detector FFs.

Theoretical Count	Column	Actual Count
74	60	74
75	61	101
76	62	102
77	63	103
100	64	104
101	65	105
102	66	106
103	67	107
104	68	110
105	69	111
106	70	112
107	71	113
110	72	114
111	73	115
112	74	116
113	75	117
114	76	120
115	77	121
116	78	122
117	79	123
120	80	124
	-	125
	Turn off	126

TERM	LOCATION	PAGE	DEFINITION
A470	E51B	41	Read Sweep Scanner (Part II)
A472	E52B	41	Read Sweep Scanner (Part II)
A474	E54B	41	Read Sweep Scanner (Part II)



CONTROL DATA CORPORATION
COMPUTER DIVISION

PROJECT OR PROGRAM
3446-A

DRAWING NUMBER
60090400

PAGE
39

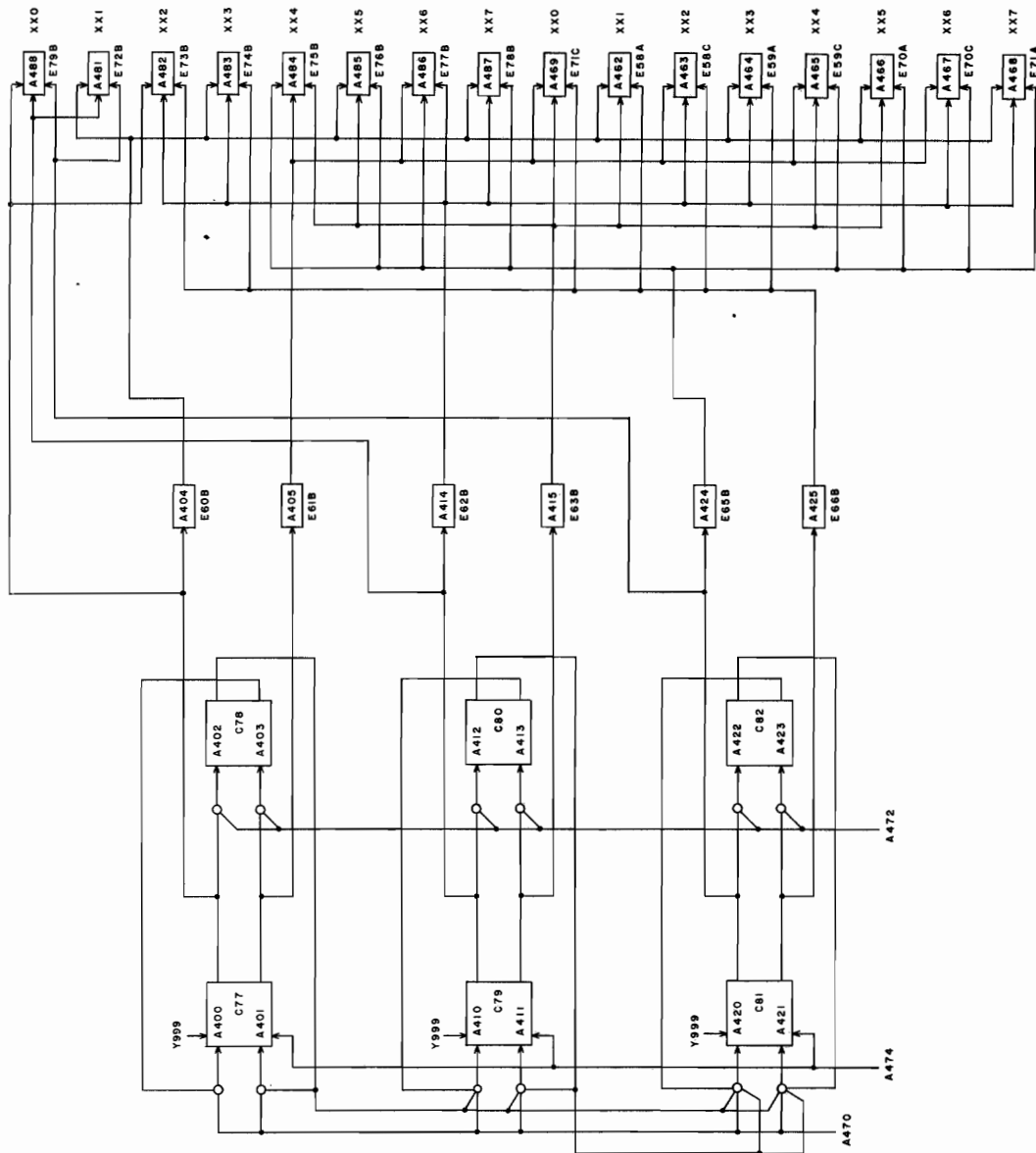
REV. AUTH. DATE REQ. DES. CHK. APPROVED

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY

REVISIONS
TITLE
READ SWEEP SCANNER
(PART 1)

COMPONENTS
TOLERANCES
FINISHES
MATERIALS

REFERENCE DRAWINGS

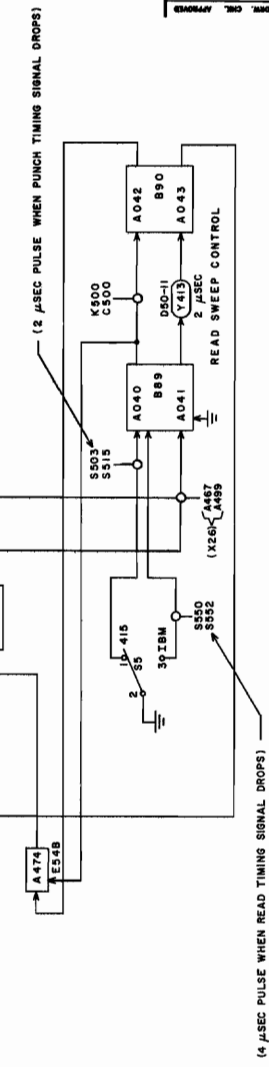
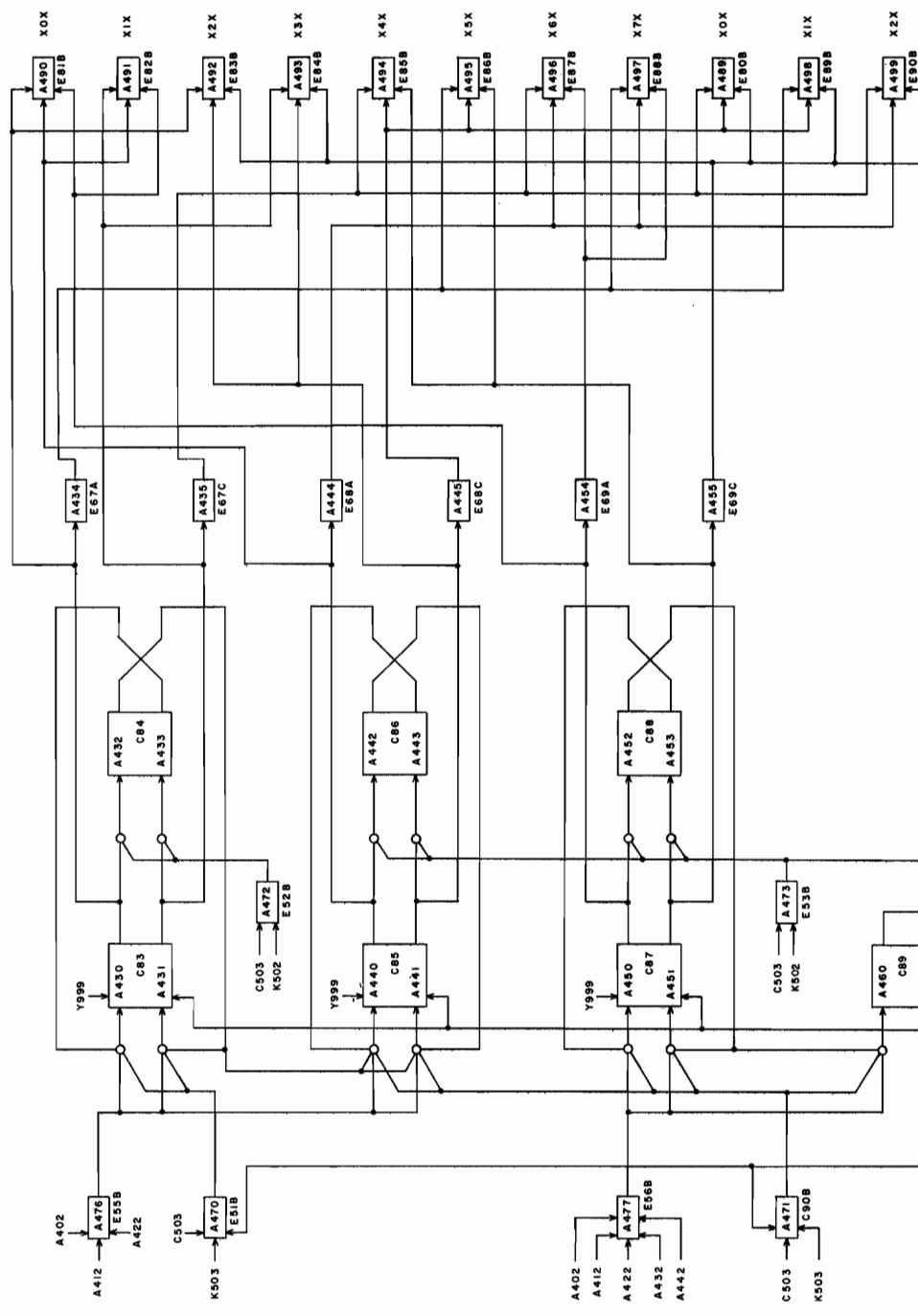


TERM	LOCATION	PAGE	DEFINITION
A402	C78	39	Read Sweep Scanner (Part I)
A412	C80	39	Read Sweep Scanner (Part I)
A422	C82	39	Read Sweep Scanner (Part I)
A467	E70C	39	XX6
C500	F26A	15	Bit Sweep Control
C503	E57C	15	Bit Sweep Control
K500	F27	15	<u>Scanner</u>
K502	F28	15	<u>Scanner</u>
K503	F28	15	Scanner
S503	F84	29	Row Pulse II FF
S515	F81C	29	2 usec Pulse Row Pulse II
S550	J82	29	<u>Read Timing (415 only)</u>
S552	J81B	29	4 usec Pulse <u>Read Timing</u>

FORM 510



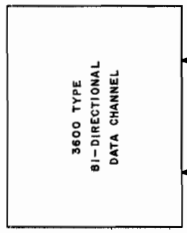
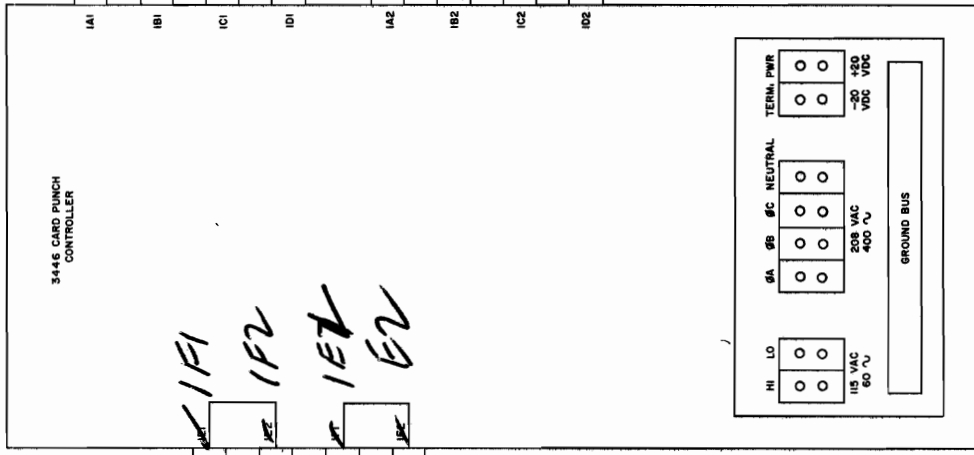
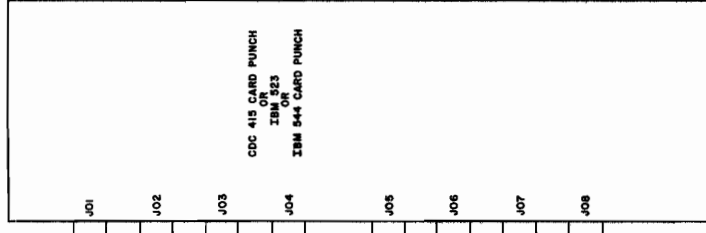
CONTROL DATA CORPORATION COMPUTER DIVISION		
PRODUCT OR PROJECT	3446-A	
DRAWING NUMBER	60090400	REV. G
		PAGE 41
REFERENCE DRAWINGS		
COMPONENTS (UNLESS OTHERWISE INDICATED)		
RESISTORS	TOLERANCE	VALUE
CAPACITORS		
TITLE READ SWEEP SCANNER (PART 2)		
DESIGNER	DATE	APPROVED
DRW	REV.	CHK.
APPROVED		



(4 μSEC PULSE WHEN READ TIMING SIGNAL DROPS)

(2 μSEC PULSE WHEN PUNCH TIMING SIGNAL DROPS)



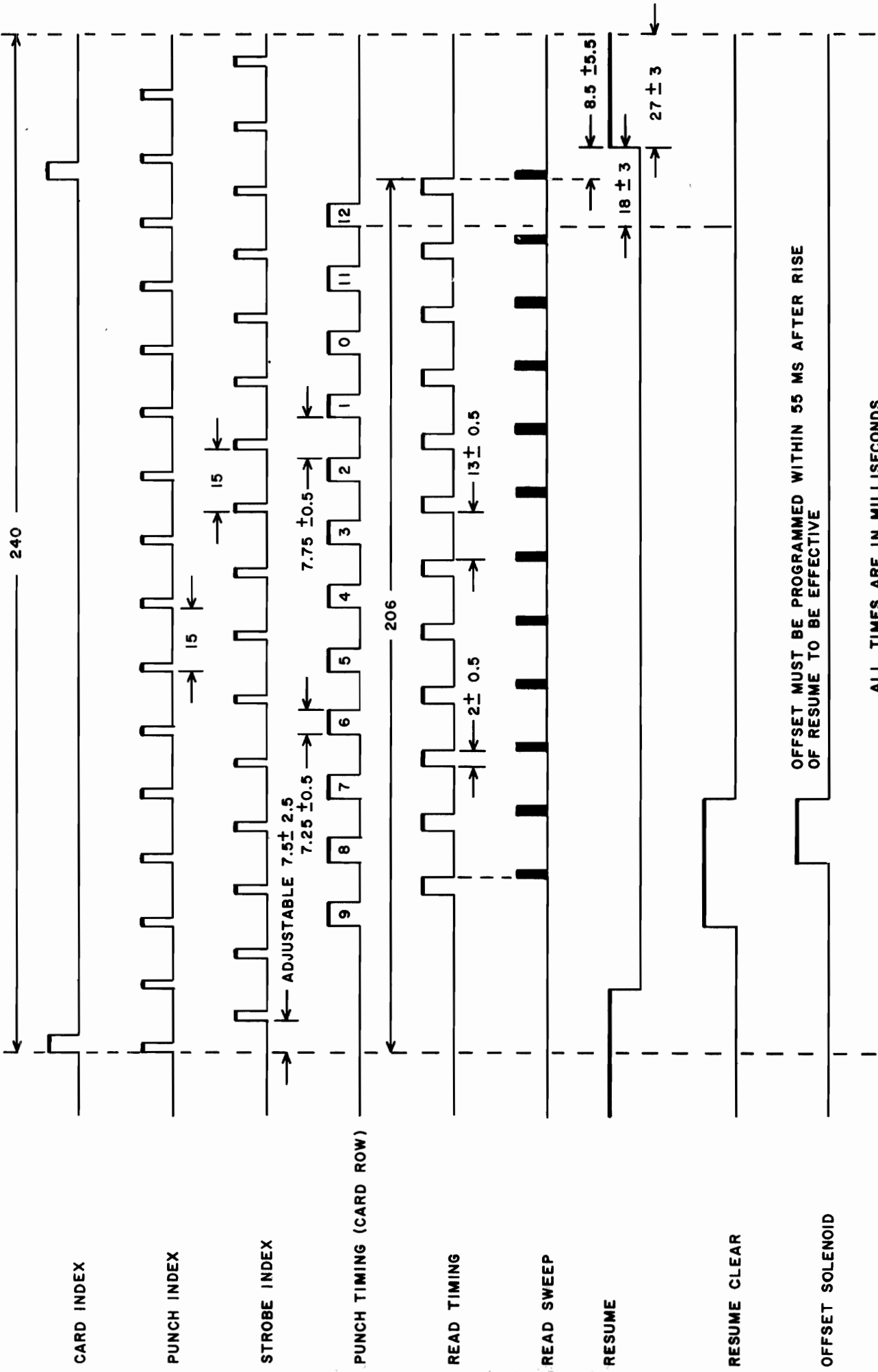


1F1
1F2
1E1
1E2

* JACKS INDICATED MUST USE TERMINATOR PLUGS WHEN NOT CONNECTED TO NEXT EQUIPMENT CHASSIS.

CONTROL DATA CORPORATION COMPUTER DIVISION		REV G
3446-A		60090400
PROPERTY OF PRODUCT		43
DESCRIPTION NUMBER		
REFERENCE DRAWINGS		
COMPONENTS	OFFICIAL DRAWING INDICATOR	
TOLERANCES	SCALE	
POSITIONS	DATE	
CONNECTIONS		
TITLE CABLE ROUTING		
DESIGNED BY	DATE	
CHECKED BY	DATE	
APPROVED BY	DATE	
REVISIONS		
REV.	DATE	REQ. BY
		CHK. BY
		APP. BY

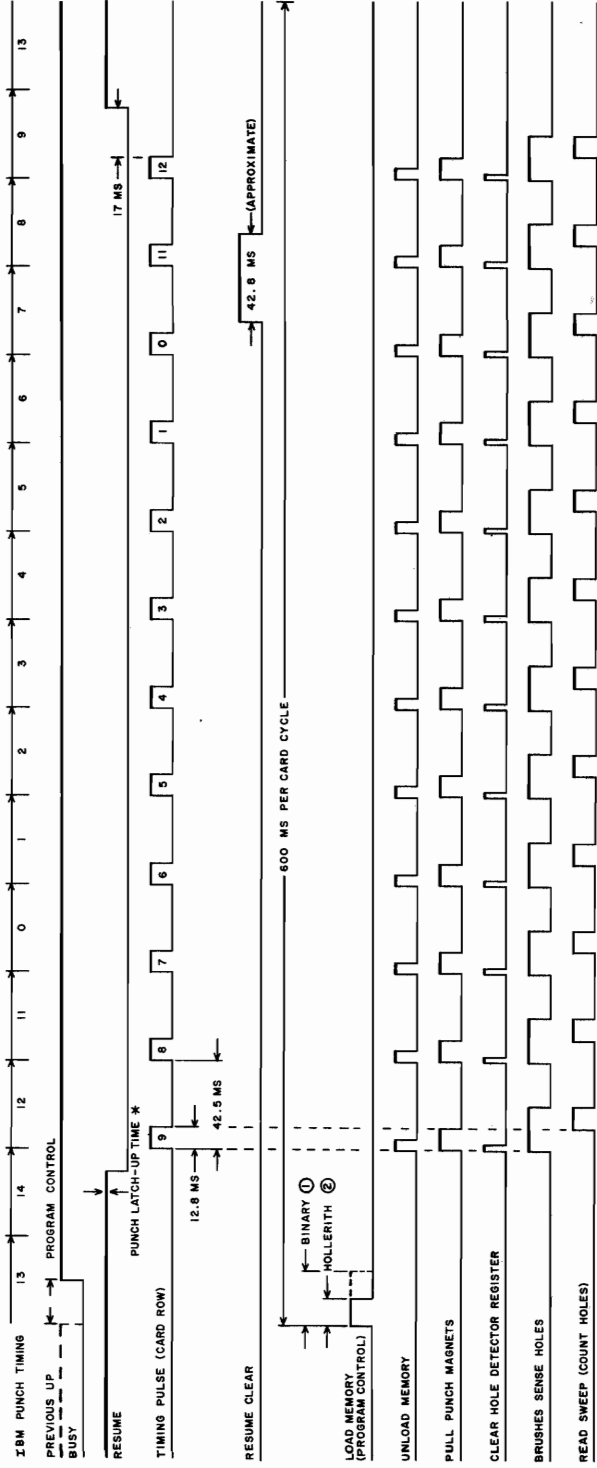
6/6



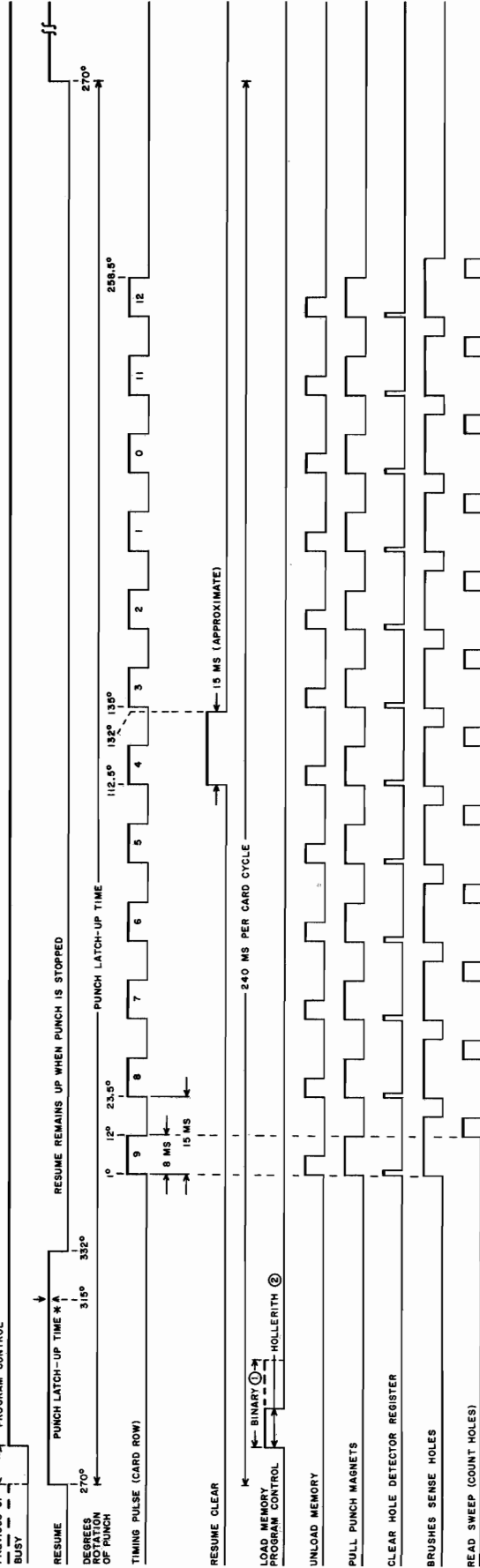
OFFSET MUST BE PROGRAMMED WITHIN 55 MS AFTER RISE OF RESUME TO BE EFFECTIVE

ALL TIMES ARE IN MILLISECONDS

IBM 523 CARD PUNCH TIMING



IBM 544 CARD PUNCH TIMING



* PUNCH WILL LATCH UP AND STOP IF MEMORY HAS NOT BEEN LOADED AT THIS TIME. TO PREVENT LATCH-UP, LOAD MEMORY AT THE START OF THE RESUME SIGNAL.
 ① BINARY MODE: 2560 μSEC PER 80 COLUMN CARD (80 12-BIT BYTES, APPROX. 29 μSEC PER 12-BIT BYTE)
 ② HOLLERITH MODE: 2200 μSEC PER 80 COLUMN CARD (40 12-BYTES, APPROX. 52 μSEC PER 12-BIT BYTE)

PART 2
MAINTENANCE



PART 2
MAINTENANCE

INTRODUCTION

Customer Engineering procedures for the 3446 Card Punch Controller follow the same general routines used in other Control Data equipment. Detailed routines and data regarding specific maintenance problems will be distributed as information is received from maintenance personnel in the field.

A thorough understanding of the controller and its functions is necessary to keep maintenance time at a minimum. This manual provides a primary source of information to aid personnel in obtaining this understanding.

Supporting documents include:

3000 Series Site Preparation and Installation Manual	Pub. No. 60110400
3000 Series Input/Output Specifications	Pub. No. 60048800
3000 Series Peripheral Equipment Reference Manual	Pub. No. 60108800
Peripheral Controller Cabinets	Pub. No. 60097300
3600 Series Printed Circuit Cards	Pub. No. 60040900
415 Card Punch Reference Manual	Pub. No. 40806900
523 Punch (IBM) Reference Manual*	Pub. No. 60096400
544 Punch (IBM) Reference Manual*	Pub. No. 60096500
Control Data Power Supplies	Pub. No. 60120700
Ault Power Supplies for Control Data Systems	Pub. No. 60107300

PHYSICAL DESCRIPTION

The 3446 Controller chassis may be mounted in various cabinets and the type of power supply may also vary depending on power and frequency requirements (refer to Pub. No. 60097300). Table 2-1 gives the physical specifications, while Table 2-2 shows the card type and location of the delay circuits used in the 3446 Controller. Figure 2-1 shows the 3446 memory and Figure 2-2, the 3446 indicator and switch panel. Figure 2-3 is a view of the rear of the controller showing logic connectors, wiring, and power supply.

*Shipped with punch.

SIGNAL CABLES

The controller communicates with a data channel using two 29-pair cables. Pin assignments are contained in Pub. No. 60048800. The 3600 family transmission technique employs a balanced, terminated transmission line. This transmission system requires each pair of lines to be terminated in its characteristic impedance by means of cable terminator plugs. On the equipment connector panel, one receptacle of each corresponding pair is used to receive a signal cable. The other receptacle is used either to terminate the cable by means of a terminator plug, or to connect some other device via another signal cable.

CAUTION

Do not connect or disconnect signal cables or terminators while terminator power is on. Pins F9 and F10 of every cabinet receptacle carry terminator voltage (+20v, -20v). This 40 vdc can burn out terminator sections and printed circuits if it accidentally contacts a transmission line while the connector is being positioned. The toggle switch on the terminator power supply may be used to turn off the terminator voltage while cables are being connected or disconnected.

Refer to the 3000 Series Input/Output Specifications for a detailed description of the logic cables and signals used between the data channel and the 3446 Card Punch Controller. See pages 35, 37, and 43 of Part 1 for controller-to-punch cable and pin assignments.

TABLE 2-1. 3446 CARD PUNCH CONTROLLER EQUIPMENT DATA

PHYSICAL CONFIGURATION		
Height:	56-7/8 inches	(144.5 cm)
Width:	42 inches	(106.68 cm)
Depth:	20-1/2 inches	(52.1 cm)
Weight:	687 pounds	(256.25 kg)
POWER REQUIREMENTS		
-20 vdc at 12.6 amperes		
+20 vdc at 3 amperes		
OPERATIONAL ENVIRONMENT		
Relative Humidity:	40% to 60%	
Ambient temperature not to exceed 80° F.		
Cooling:	1200 BTU/hour	

TABLE 2-2. LOGIC CABLING AND DELAY CARD LOCATIONS

TERM	DELAY	CARD TYPE	LOCATION
Y 000	0.7-1.1 μ sec	244141	J17-1
Y 001	↓	↓	J17-2
Y 002	↓	↓	J17-3
Y 003	↓	↓	J17-4
Y 004	1 μ sec	73A	J20-5
Y 005	0.7-1.1 μ sec	244141	J17-5
Y 006	2 μ sec	50	D50-3
Y 007	4 μ sec	50	D50-1-2
Y 009	1 μ sec	73A	J18-4
Y 213	140 msec	77	J22-6-7
Y 301	1 μ sec	73A	G63-4
Y 406	0.8 μ sec	73A	G63-5
Y 407	0.8 μ sec		J18-5
Y 408	5 μ sec		G63-6

TABLE 2-2. (Cont'd)

TERM	DELAY	CARD TYPE	LOCATION
Y 409			G62-6
Y 410			E50-6
Y 411	5 μ sec	73A	J18-6
Y 412	5 μ sec	73A	J19-6
Y 413	2 μ sec	50	D50-11
Y 500	800 μ sec	73A	G62-10, G63-10
Y 501	800 μ sec	73A	G62-11
Y 502	800 μ sec	73A	G62-12
Y 503	2 μ sec	50	D50-8
Y 504	1 msec	73A	J18-10, J19-10
Y 505	400 μ sec	73A	E50-10
Y 506	2 μ sec	50	D50-9
Y 507	2 μ sec	50	D50-10
Y 508	4 μ sec	73A	J20-6-4, E50-4
Y 509	20 μ sec	73A	J20-7
Y 510	150 μ sec	73A	E50-9
Y 512	2 μ sec	50	D50-7
Y 513	2 μ sec	50	D50-12
Y 514	20 μ sec	73A	J18-7
Y 515	4 μ sec	50	J79-1-2
Y 516	20 μ sec	73A	J20-B
Y 517	4 μ sec	50	J79-3-4
Y 518	30 μ sec	73A	G63-7

1160

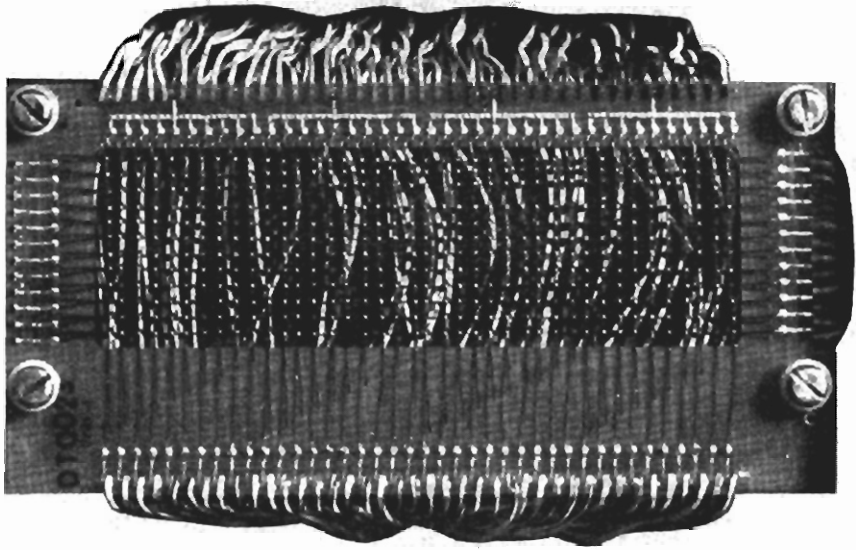


Figure 2-1. 3446 Memory

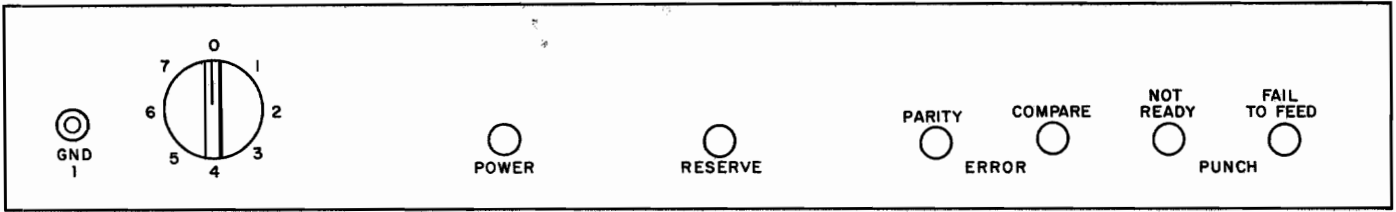
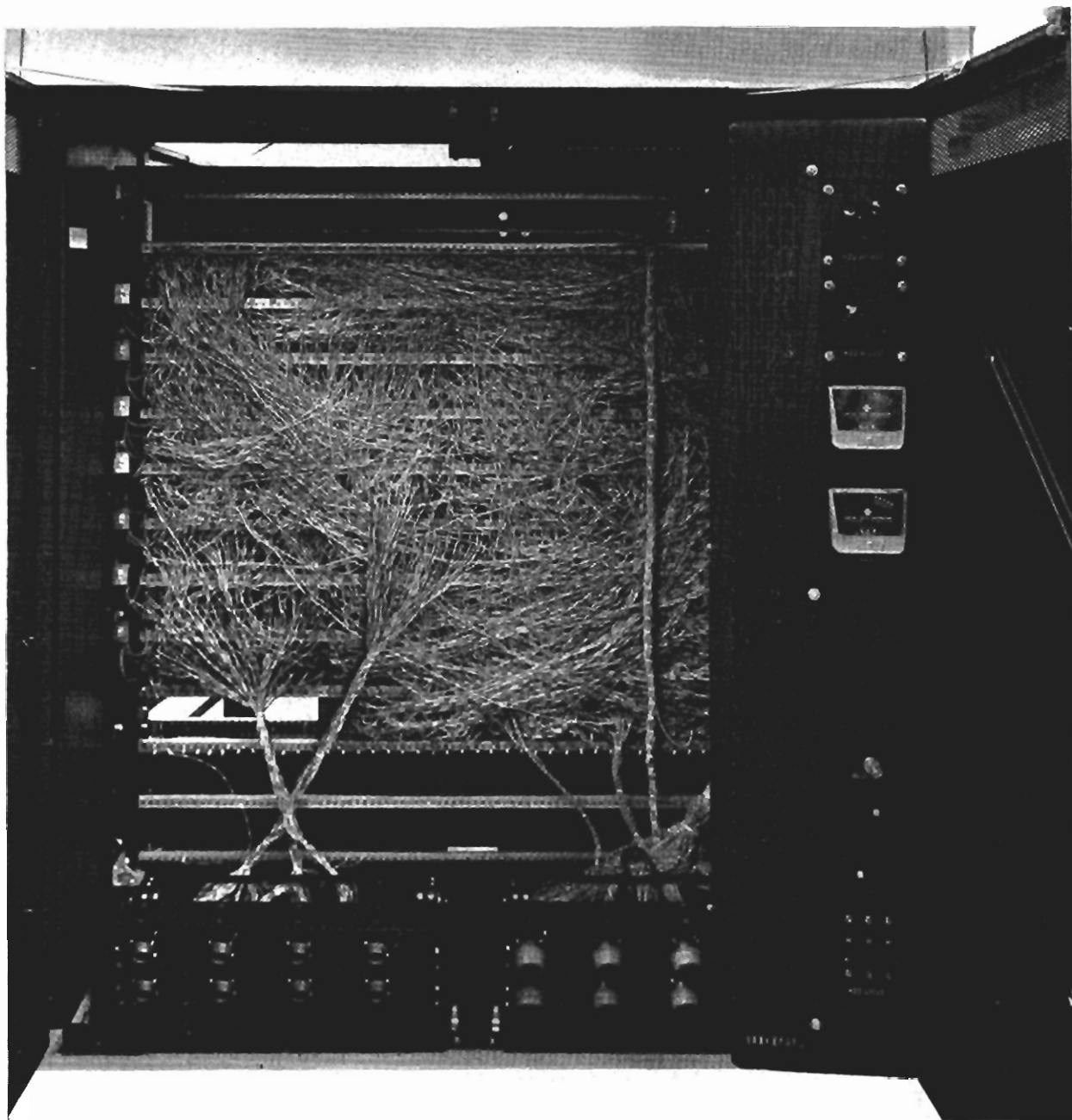


Figure 2-2. 3446 Indicator and Switch Panel



1162

Figure 2-3. 3446 Card Punch Controller - Rear View (Type B Cabinet)

PART 3

PARTS LIST



PART 3
PARTS LIST

The parts list provides the identification and ordering data necessary for the replacement of electrical and hardware parts for this equipment. The equipment designation, final assembly number, and equipment name appear at the top of each page. The list is arranged in disassembly order, using levels of assembly to indicate the relationship of parts.

A typical parts list is shown below:

MAG14-C 18588000 D 'MAG14C CENTRAL STORAGE MOD				ECO-NO** **
L E V E L*	PART NO	REV	DESCRIPTION	
1	18515400	B	SYSTEM SUB-ASSY	
2	18074900	J	STOR MODULE ASSY WIRED	IN 064591
3	18074700	G	PL TOP STORAGE MODULE	
3	18074800	H	STACK AND DR DK ASSY WIRED	
4	18075000	G	STACK ASSY WIRED STOR MODULE	
5	63130100	F	PLANE ASSY INNER STOR MODULE	IN 020152
6	63702100	J	BOARD BLANK MEMORY PLANE IN	
3	18541302	00	0000000000000000 0000000000000000	***

Refer to the Literature Distribution Center Catalog for related manuals on printed circuit card assemblies, peripheral cabinets, power supplies, and vendor parts lists necessary to complete a total parts breakdown of the equipment.

*The level of assembly in relation to the final cabinet assembly (2 is the subassembly of level 1, 3 is the subassembly of level 2, etc).

**The ECO-NO on which the part is either added (IN) or deleted (OUT) in the equipment.

***If the description column contains all zeros, this means the drawing is not released. Revisions will show corrections.

3446 Card Punch Controller
 CDC Dwg. No. 25175301

PARTS LIST

DATE: _____

CDC - DRAWING NUMBER	DESCRIPTION	QUANTITY EACH MACHINE
11486100	Bar, card spacer assembly	
10035300	Bar, card spacer assembly	
10035403	Bar, card spacer assembly	
25153000	Bar, mounting, connector (01-90)	
00857102	Bearing, sleeve, flanged, nylon	
24542100	Binding post, black	
30008700	Bracket, angle	
25157800	Bracket, mounting, memory stack	
30116600	Bracket, mounting, shield	
18878100	Bracket, Relay	
25176500	Bracket, switch	
25184100	Bracket, terminal strip	
25176901	Cable assembly, power	
30002201	Capacitor, fixed, electrolytic; 10-10 uf, 50 wvdc	
25178401	Card Placement	
25159501	Card spacer assembly ←	
25159601	Card spacer assembly →	
00863702	Clamp, cable, power cable assembly	
30093502	Clip, cover, terminal strip	
25168901	Connector, assembly, 1E1	
25168902	Connector assembly, 1E2	
25168903	Connector assembly, 1F1	
25168904	Connector assembly, 1F2	
25169001	Connector assembly, 1A1	
25169002	Connector assembly, 1B1	
25169003	Connector assembly, 1C1	
25169004	Connector assembly, 1D1	
25169005	Connector assembly, 1A2	
25169006	Connector assembly, 1B2	
25169007	Connector assembly, 1C2	
25169008	Connector assembly, 1D2	
30094410	Connector, receptacle, 10-socket, black	
30094406	Connector, receptacle, 10-socket, blue	
30094402	Connector, receptacle, 10-socket, red	
24512001	Connector, receptacle, 24-socket	

PARTS LIST

DATE: _____

CDC - DRAWING NUMBER	DESCRIPTION	QUANTITY EACH MACHINE
10001800	Connector, receptacle, 30-socket	
30000901	Connector, receptacle, 61-socket	
17625500	Connector, panel assembly	
17625600	Connector, panel assembly	
25156901	Cover, bar, card spacer assembly	
25156902	Cover, bar, card spacer assembly	
30093614	Cover, terminal strip	
24510903	Fanning strip, LH, power cable assembly	
25169206	Guide, thumbscrew, LH (used with "C" type cabinet only)	
25165800	Guide, thumbscrew, RH (used with "C" type cabinet only)	
30104800	Hinge, connector panel	
00815800	Knob, bar type	
00856101	Knob (used with "C" type cabinet only)	
24512302	Lamp, incandescent, 28v	
24542700	Lampholder, indicator	
25159701	Latch, connector panel (used with "B" type cabinet only)	
25154501	Member, frame, chassis bottom	
25153900	Member, frame, chassis left side	
25153800	Member, frame, chassis right side	
25154502	Member, frame, chassis, top	
30980001	Memory stack assembly	
30980200	Memory stack subassembly, plane 1	
30980400	Memory stack subassembly, plane 2	
25178500	Panel, switch mounting	
24518500	Pin, ground	
30104400	Pin, straight, threaded (used with "C" type cabinet only)	
24500703	Pin, taper	
25165400	Plate, designation, wide (01-04)	
25158000	Plate, designation, narrow, (05-18)	
25165500	Plate, designation, wide (19-38)	
24548100	Plate, identification	
30103800	Plate, retaining	
25156701	Plate, retaining, connector	

PARTS LIST

DATE: _____

CDC - DRAWING NUMBER	DESCRIPTION	QUANTITY EACH MACHINE
25156801	Plate, retaining, connector	
25156802	Plate, retaining, connector	
18792703	Relay, Thermal, 20 VDC	
24513200	Relay, 24 vdc 2C, 2PDT	
11857500	Retainer, thumbscrew, Card spacer assembly	
00843513	Ring, retaining (used with "C" type cabinet only)	
25166201	Shield, connector	
25166202	Shield, connector	
30980500	Shield, memory stack assembly	
24519600	Socket, relay (used for item 24513200)	
30013802	Spacer	
00866901	Spacer, 1/8 long, memory stack assembly	
00866905	Spacer, 3/4 long, memory stack assembly	
30104200	Spring, compression, helical (used with "C" type cabinet only)	
24519700	Spring, relay (used for item 24513200)	
22901201	Strip marker, narrow (01-14)	
22901401	Strip marker, narrow (15-38)	
22901202	Strip marker, narrow (39-52)	
22901203	Strip marker, narrow (53-66)	
22901402	Strip marker, narrow (67-90)	
22901101	Strip marker, wide (01-14)	
22901301	Strip marker, wide (15-38)	
22901102	Strip marker, wide (39-52)	
22901103	Strip marker, wide (53-66)	
22901302	Strip marker, wide (67-90)	
24502214	Strip marker, 14-character	
24501214	Strip, terminal board, 14-terminal	
30103900	Stud, extension	
30104600	Support, connector assembly	
24507502	Switch, rotary, 6-pole, 8-position	
24535400	Switch, toggle, DPDT	
00856604	Thumbscrew	
11857400	Thumbscrew, card spacer assembly	
25171901	Wire tabulation	

PARTS LIST

DATE: _____

CDC - DRAWING NUMBER	DESCRIPTION	QUANTITY EACH MACHINE
25172000	Wire tabulation, cabling	
25185100	Wire tabulation, power	

3446 Printed Circuit Card Assemblies
PARTS LIST

DATE: _____

CDC - DRAWING NUMBER	DESCRIPTION	QUANTITY EACH MACHINE
10005001	Printed circuit card assembly; type 01	
10201801	Printed circuit card assembly; type 11	
10201901	Printed circuit card assembly; type 12	
10202001	Printed circuit card assembly; type 13	
10202501	Printed circuit card assembly; type 14	
10202601	Printed circuit card assembly; type 15	
10202701	Printed circuit card assembly; type 16	
10202801	Printed circuit card assembly; type 21	
10203401	Printed circuit card assembly; type 22	
10203501	Printed circuit card assembly; type 23	
10203601	Printed circuit card assembly; type 24	
10232801	Printed circuit card assembly; type 29	
10334401	Printed circuit card assembly; type 30	
10203701	Printed circuit card assembly; type 31	
10203801	Printed circuit card assembly; type 32	
10203901	Printed circuit card assembly; type 33	
10339201	Printed circuit card assembly; type 50	
10336701	Printed circuit card assembly; type 60	
10206001	Printed circuit card assembly; type 61	
10005901	Printed circuit card assembly; type 62	
10335201	Printed circuit card assembly; type 73	
10213501	Printed circuit card assembly; type 77	
10334701	Printed circuit card assembly; type 85	
10337201	Printed circuit card assembly; type 87	
24406901	Printed circuit card assembly; type 97	
24414101	Printed circuit card assembly; type 244141	
*17683900	Printed circuit card assembly; type P14	
**17684500	Printed circuit card assembly; type P16	
17685700	Printed circuit card assembly; type P50	
17686300	Printed circuit card assembly; type P52	
17687200	Printed circuit card assembly; type P56	
17677900	Printed circuit card assembly; type E07	

* JJA card (Pn 50045500) in 3446-A/B with FV465-A is installed, and in 3446-C.

** PJB card (PN 50068900) in 3446-A/B with FV465-A is installed, and in 3446-C.

CDC Modification of the IBM 523
Card Punch

PARTS LIST

CDC Dwg. No. 22931700

DATE: _____

CDC - DRAWING NUMBER	DESCRIPTION	QUANTITY EACH MACHINE
22931700	Modification, IBM 523 Card Punch (on-line only)	
10180800	· Bracket, Capacitor	
17747000	· Card Punch (IBM 523)	
24544101	· Capacitor, Fixed, Electrolytic; 1000 uf, 50 wvdc	
29939200	· Connector Panel	
24512001	· Connector, receptacle, 24-socket	
24538500	· Diode	
24504871	· Resistor, fixed; 2200 ohm, 2W, $\pm 5\%$	
24544004	· Resistor, WW; 100 ohm, 10 W	
24550000	· Switch, DP, N.O., 10 Amp	

CDC Modification of the IBM
544 Card Punch

PARTS LIST

CDC Dwg. No. 24113300

DATE: _____

CDC - DRAWING NUMBER	DESCRIPTION	QUANTITY EACH MACHINE
24113301	Modification, IBM 544, Card Punch	
17745400	. Card Punch (IBM 544)	
10180800	. Bracket, Capacitor	
24544101	. Capacitor, fixed, electrolytic; 1000 uf, 50 wvdc	
29939400	. Connector Panel	
93339001	. Connector, receptacle, 5-pin	
24512001	. Connector, receptacle, 24-socket	
24530500	. Diode	
24504871	. Resistor, fixed; 2200 ohm, 2W, $\pm 5\%$	
24544004	. Resistor, WW; 100 ohm, 10W	

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

L E V E L

PART-NO	REV	DESCRIPTION	ECO-NO
00815800	A	KNOB BAR TYPE	IN 020524
00856604	C	THUMBSCREW	IN 020524
00857102	B	BRG SLV-FLG NYLON 1/4	IN 020524
09005307	A	SCR MACH FH SLOT 1/4	IN 020524
09018301	A	SCR MACH PAN HD PHL NO. 5	IN 020524
09018303	A	SCR MACH PAN HD PHL NO. 5	IN 016690
09029102	D	SCREW, SEMS PHILLIPS ROUND HD	IN 020524
09029104	D	SCREW, SEMS PHILLIPS ROUND HD	IN 020524
09030905	A	RIVET POP OPEN-END 3/32 DIA	IN 020524
10001800	U	CONN RECEP 30 SOCKET CONTACT	IN 020524
10125103	A	HEXAGON MACHINE SCREW NUTS	IN 020524
10125104	A	HEXAGON MACHINE SCREW NUTS	IN 020524
10125105	A	HEXAGON MACHINE SCREW NUTS	IN 020524
10125106	A	HEXAGON MACHINE SCREW NUTS	IN 020524
10125301	A	HEXAGON NUTS	IN 020524
10125460	A	82 FH MACH SCR SLOT DR 8-32	IN 020524
10126101	A	INTERNAL TOOTH LOCK WASHERS	IN 020524
10126102	A	INTERNAL TOOTH LOCK WASHERS	IN 020524
10126103	A	INTERNAL TOOTH LOCK WASHERS	IN 020524
10126104	A	INTERNAL TOOTH LOCK WASHERS	IN 016690
10126105	A	INTERNAL TOOTH LOCK WASHERS	IN 020524
10126106	A	INTERNAL TOOTH LOCK WASHERS	IN 020524
10127104	A	SCR MACH PAN PHL 4-40	IN 020524
10127111	A	SCR MACH PAN PHL 6-32	IN 020524
10127113	A	SCR MACH PAN PHL 6-32	IN 020524
10127114	A	SCR MACH PAN PHL 6-32	IN 020524
10127120	A	SCR MACH PAN PHL 8-32	IN 016690
10127122	A	SCR MACH PAN PHL 8-32	IN 020524
10127141	A	SCR MACH PAN PHL 10-32	IN 020524
10127144	A	SCR MACH PAN PHL 10-32	IN 020524
11819100	C	CHASSIS PWR AND GROUND WIRING	IN 020524
17620300	D	STRAP CABLE ADJUSTABLE	IN 020524
17625500	D	CONNECTOR PANEL ASSY	IN 020524
17625600	E	CONNECTOR PANEL ASSY	IN 020524
17711000	D	PLATE IDENT COMPUTER DEV DIV	IN 020524
17743002	K	LEAD ELECT 18 GA 5 IN RED	IN 020524
17743003	K	LEAD ELECT 18 GA 5 IN BLUE	IN 020524
17743005	K	LEAD ELECT 18 GA 7 IN RED	IN 020524
17743006	K	LEAD ELECT 18 GA 7 IN BLUE	IN 020524
18126200	K	CHASSIS SUB-ASSEMBLY, 3446	IN 014132
00838200	J	NUT U TYPE NO. 6-32NC	IN 016071
00856604	C	THUMBSCREW	IN 016071
00857102	B	BRG SLV-FLG NYLON 1/4	IN 016071
09005306	A	SCR MACH FH SLOT 1/4	IN 016071
09018301	A	SCR MACH PAN HD PHL NO. 5	IN 016071
09018302	A	SCR MACH PAN HD PHL NO. 5	IN 016071
10001800	U	CONN RECEP 30 SOCKET CONTACT	IN 016071
10125103	A	HEXAGON MACHINE SCREW NUTS	IN 016071
10125105	A	HEXAGON MACHINE SCREW NUTS	IN 016071
10125106	A	HEXAGON MACHINE SCREW NUTS	IN 016071
10125301	A	HEXAGON NUTS	IN 016071
10125460	A	82 FH MACH SCR SLOT DR 8-32	IN 016071
10125607	A	PLAIN WASHERS	IN 016071

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

LEVEL	PART-NO	REV	DESCRIPTION	ECO-NO
2	10126101	A	INTERNAL TOOTH LOCK WASHERS	IN 016071
2	10126102	A	INTERNAL TOOTH LOCK WASHERS	IN 016071
2	10126103	A	INTERNAL TOOTH LOCK WASHERS	IN
2	10126104	A	INTERNAL TOOTH LOCK WASHERS	IN 016071
2	10126105	A	INTERNAL TOOTH LOCK WASHERS	IN 016071
2	10126106	A	INTERNAL TOOTH LOCK WASHERS	IN 016071
2	10127104	A	SCR MACH PAN PHL 4-40	IN 016071
2	10127111	A	SCR MACH PAN PHL 6-32	IN 016071
2	10127114	A	SCR MACH PAN PHL 6-32	IN 016071
2	10127124	A	SCR MACH PAN PHL 8-32	IN
2	10127141	A	SCR MACH PAN PHL 10-32	IN
2	10127142	A	SCR MACH PAN PHL 10-32	IN 016071
2	10127144	A	SCR MACH PAN PHL 10-32	IN 016071
2	17620300	C	STRAP CABLE ADJUSTABLE	IN 016071
2	17743002	K	LEAD ELECT 18 GA 5 IN RED	IN 016071
2	17743003	K	LEAD ELECT 18 GA 5 IN BLUE	IN 016071
2	17743005	K	LEAD ELECT 18 GA 7 IN RED	IN 016071
2	17743006	K	LEAD ELECT 18 GA 7 IN BLUE	IN 016071
2	17743008	K	LEAD ELECT 18 GA 9 1/2 IN RED	IN 016071
2	17743009	K	LEAD ELECT 18 GA 9 1/2 IN BLU	IN 016071
2	17901553	G	5-40 SCR THD ROLL PHL H PAN	IN
2	17901555	G	5-40 SCR THD ROLL PHL H PAN	IN
2	18420300	A	CONTROL PANEL ASSEMBLY	IN 014963
2	00815800	A	KNOB BAR TYPE	IN
2	10125103	A	HEXAGON MACHINE SCREW NUTS	IN
2	10126101	A	INTERNAL TOOTH LOCK WASHERS	IN
2	10127104	A	SCR MACH PAN PHL 4-40	IN
2	17620300	C	STRAP CABLE ADJUSTABLE	IN
2	24507502	D	SWITCH ROTARY (6 POLE) (8 POS)	IN
2	24512302	J	LAMP, INCANDESCENT	IN
2	24513200	A	RELAY 6 V	IN
2	24518500	A	PIN, GROUND	IN
2	24519600	B	SOCKET, RELAY 10 PIN	IN
2	24519700	A	RETAINER, SPRING, RELAY SOCKET	IN
2	24542101	B	BINDING POST ELECT BLACK	IN
2	24542700	B	INDICATOR LAMP HOLDER	IN
2	25172000	D	CABLE WIRING TABULATION	IN
2	25178500	A	PANEL, SWITCH MOUNTING	IN
2	18792703	B	RELAY THERMAL TIME DELAY	IN 020267
2	18878100	B	BRACKET RELAY	IN 017502
2	18894500	A	W/L PWR ON MC DELAY	IN 017502
2	17973600	F	TERM CRIMP TYPE INSUL SUPPORT	IN 022140
2	18031601	B	POD TERMINAL INSULATION	IN
2	24500707	J	PIN TAPER	IN
2	24500810	H	INSULATION SLEEVING ELECT	IN
2	24548301	J	WIRE FLECT 24 AWG - 0	IN
2	24548305	J	WIRE FLECT STRD INS. HL APPD	IN
2	24548307	J	WIRE FLECT STRD INS. HL APPD	IN
2	22901101	B	STRIP, MARKER, SHORT WIDF	IN 016071
2	10047600	A	EXTRUSION MARKER STRIP	IN
2	22901102	B	STRIP, MARKER, SHORT WIDF	IN 016071
2	10047600	A	EXTRUSION MARKER STRIP	IN
2	22901103	B	STRIP, MARKER, SHORT WIDF	IN 016071

REV T

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25175301 FE CHASSIS ASSY CARD PUNCH CONT

LEVEL	PART-NO	DFV	DESCRIPTION	ECO-NO
3	10047600	A	EXTRUSION MARKER STRIP	IN
3	22901201	B	STRIP, MARKER, SHORT NARROW	IN 016071
3	10057600	A	EXTRUSION NARROW MARKER STRIP	IN
3	22901202	R	STRIP, MARKER, SHORT NARROW	IN 016071
3	10057600	A	EXTRUSION NARROW MARKER STRIP	IN
3	22901203	B	STRIP, MARKER, SHORT NARROW	IN 016071
3	10057600	A	EXTRUSION NARROW MARKER STRIP	IN
3	22901301	C	STRIP, MARKER, LONG WIDE	IN 016071
3	10047600	A	EXTRUSION MARKER STRIP	IN
3	22901302	C	STRIP, MARKER, LONG WIDE	IN 016071
3	10047600	A	EXTRUSION MARKER STRIP	IN
3	22901401	B	STRIP, MARKER, LONG NARROW	IN 016071
3	10057600	A	EXTRUSION NARROW MARKER STRIP	IN
3	22901402	R	STRIP, MARKER, LONG NARROW	IN 016071
3	10057600	A	EXTRUSION NARROW MARKER STRIP	IN
3	24501214	A	STRIP TERMINAL	IN
3	24502214	C	STRIP MARKER 1 THRU 14	IN
3	24511440	K	LEAD FLECT 2.25 IN. SOLID BLK	IN 016071
3	24511441	K	LEAD FLECT 2.25 IN. SOLID RED	IN 016071
3	24511442	K	LEAD FLECT 2.25 IN. SOLID BLU	IN 016071
3	24535400	C	SWITCH TOGGLE DPDT 2 POSITION	IN
3	25153000	D	MTG., BAR, CONNECTOR (01-90)	IN 016071
3	25153800	G	MEMBER FRAME CHAS-RIGHT SIDE	IN 016071
3	25153500	B	EXTRUSION CHASSIS	IN
3	25153900	G	MEMBER FRAME CHAS LEFT SIDE	IN 016071
3	25153500	B	EXTRUSION CHASSIS	IN
3	25154501	E	MEMBER, FR CHAS BOT AND TOP	IN 016071
3	30003700	R	ALUMINUM ALLOY SPECIAL SHAPED	IN
3	25154502	F	MEMBER, FR CHAS BOT AND TOP	IN 016071
3	30003700	R	ALUMINUM ALLOY SPECIAL SHAPED	IN
3	25156700	C	PLATE, RETAINING, ELEC. CONN.-	IN 016071
3	0902R002	B	WELD NUT TYPE SN	IN 019827
3	25156701	C	PLATE CRS 16 GA (.059)	IN 019827
3	25156801	C	PL RETAINING ELEC. CONN	IN 016071
3	25156802	C	PL RETAINING ELEC. CONN	IN 016071
3	25157800	A	BRACKET MTG MEMORY	IN 015097
3	25158000	A	PL DESIGNATION NARROW(05-18)	IN 016071
3	10057600	A	EXTRUSION NARROW MARKER STRIP	IN
3	25159700	A	LATCH, CONNECTOR PANEL	IN 016071
3	25165400	A	PL DESIGNATION W (01-04)	IN 016071
3	10047600	A	EXTRUSION MARKER STRIP	IN
3	25165500	A	PL DESIGNATION W (19-38)	IN 016071
3	10047600	A	EXTRUSION MARKER STRIP	IN
3	25166201	H	SHIELD CONN RECP LETTERED	IN 016071
3	30116500	A	SHIELD CONN RECP ELEC-LONG	IN
3	25166202	H	SHIELD CONN RECP LETTERED	IN 016071
3	30116500	A	SHIELD CONN RECP ELEC-LONG	IN
3	25168900	F	CONNECTOR ASSY	IN 018221
3	00865004	J	GROM STR REL 0.468 ID	IN 017755
3	24500707	J	PIN TAPER	IN 017755
3	24500802	H	INSULATION SLEEVING ELECT	IN 017755
3	24548301	J	WIRE FLECT 24 AWG - 0	IN 017755
3	24548303	J	WIRE FLECT STRD INS. UL APPD	IN 017755

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

LEVEL	PART-NO	REV	DESCRIPTION	ECO-NO
3	24548307	J	WIRE ELEC STRD INS. UL APPD	IN 017755
3	30000901	R	CONN. RECP ELEC 61 PIN CONT	IN 017755
3	30000902	R	FEMALE CONTACT	IN 017755
3	31000001	B	WIRE, 24GA TWIST, PR. BR-W/RD	IN 017755
3	31000002	B	WIRE, 24GA TWIST, PR. BR-W/YE	IN 017755
3	31000003	B	WIRE, 24GA TWIST, PR. BR-W/BL	IN 017755
3	31000004	R	WIRE, 24GA TWIST, PR. BR-W/GY	IN 017755
3	31000005	R	WIRE, 24GA TWIST, PR. BR-W/BL	IN 017755
3	31000006	R	WIRE, 24GA TWIST, PR. RD-W/RD	IN 017755
3	31000007	B	WIRE, 24GA TWIST, PR. RD-W/YE	IN 017755
3	31000008	B	WIRE, 24GA TWIST, PR. RD-W/BL	IN 017755
3	31000009	B	WIRE, 24GA TWIST, PR. RD-W/GY	IN 017755
3	31000010	B	WIRE, 24GA TWIST, PR. RD-W/BL	IN 017755
3	31000011	B	WIRE, 24GA TWIST, PR. OR-W/RD	IN 017755
3	31000012	R	WIRE, 24GA TWIST, PR. OR-W/YE	IN 017755
3	31000013	R	WIRE, 24GA TWIST, PR. OR-W/BL	IN 017755
3	31000014	R	WIRE, 24GA TWIST, PR. OR-W/GY	IN 017755
3	31000015	B	WIRE, 24GA TWIST, PR. OR-W/BL	IN 017755
3	31000016	R	WIRE, 24GA TWIST, PR. YE-W/R	IN 017755
3	31000017	R	WIRE, 24GA TWIST, PR. YE-W/YE	IN 017755
3	31000018	R	WIRE, 24GA TWIST, PR. YE-W/BL	IN 017755
3	31000019	R	WIRE, 24GA TWIST, PR. YE-W/GY	IN 017755
3	31000020	R	WIRE, 24GA TWIST, PR. YE-W/BL	IN 017755
3	31000021	R	WIRE, 24GA TWIST, PR. GR-W/RD	IN 017755
3	31000022	B	WIRE, 24GA TWIST, PR. GR-W/YE	IN 017755
3	31000023	R	WIRE, 24GA TWIST, PR. GR-W/BL	IN 017755
3	31000024	R	WIRE, 24GA TWIST, PR. GR-W/GY	IN 017755
3	31000025	R	WIRE, 24GA TWIST, PR. GR-W/BL	IN 017755
3	31000026	B	WIRE, 24GA TWIST, PR. BLU-W/R	IN 017755
3	31000027	R	WIRE, 24GA TWIST, PR. BLU-W/Y	IN 017755
3	31000028	R	WIRE, 24GA TWIST, PR. BLU-W/B	IN 017755
3	31000029	R	WIRE, 24GA TWIST, PR. BLU-W/R	IN 017755
3	25168901	F	CONN ASSY IE1	IN 017755
3	25168902	F	CONN ASSY IE2	IN 017755
3	25168903	F	CONN ASSY IF1	IN 017755
3	25168904	F	CONN ASSY IF2	IN 017755
3	25169000	E	CONNECTOR ASSY	IN 017755
3	24500707	J	PIN TAPER	IN 017755
3	24500801	H	INSULATION SLEEVING ELECT	IN 017755
3	24500802	H	INSULATION SLEEVING ELECT	IN 017755
3	24512001	D	CONN RECP, 4 HOLE PNL MTG 24	IN 017755
3	24548300	J	WIRE, ELECT, 24 AWG INSUL, U/L	IN 017755
3	24548301	J	WIRE ELECT 24 AWG - 0	IN 017755
3	24548303	J	WIRE ELEC STRD INS. UL APPD	IN 017755
3	24548305	J	WIRE ELEC STRD INS. UL APPD	IN 017755
3	24548306	J	WIRE ELEC STRD INS. UL APPD	IN 017755
3	24548307	J	WIRE ELEC STRD INS. UL APPD	IN 017755
3	24548311	J	WIRE ELEC STRD INS. UL APPD	IN 017755
3	24548312	J	WIRE ELEC STRD INS. UL APPD	IN 017755
3	24548313	J	WIRE ELEC STRD INS. UL APPD	IN 017755
3	24548314	J	WIRE ELEC STRD INS. UL APPD	IN 017755
3	24548315	J	WIRE ELEC STRD INS. UL APPD	IN 017755
3	24548316	J	WIRE ELEC STRD INS. UL APPD	IN 017755

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

LEVEL	PART-NO	DEV	DESCRIPTION	ECO-NO
3	24548317	J	WIRE ELFC STRD INS. UL APPD	IN 017755
3	24548318	J	WIRE FLFC STRD INS. UL APPD	IN 017755
3	24548319	J	WIRE FLFC STRD INS. UL APPD	IN 017755
3	24548320	J	WIRE ELFC STRD INS. UL APPD	IN 017755
3	24548321	J	WIRE FLFC STRD INS. UL APPD	IN 017755
3	24548322	J	WIRE FLFC STRD INS. UL APPD	IN 017755
3	24548323	J	WIRE FLFC STRD INS. UL APPD	IN 017755
3	24548324	J	WIRE FLFC STRD INS. UL APPD	IN 017755
3	24548325	J	WIRE FLFC STRD INS. UL APPD	IN 017755
3	24548326	J	WIRE FLFC STRD INS. UL APPD	IN 017755
3	24548327	J	WIRE FLFC STRD INS. UL APPD	IN 017755
3	24548328	J	WIRE ELFC STRD INS. UL APPD	IN 017755
2	25169001	E	CONNECTOR ASSY 1A1	IN 017755
2	25169002	F	CONNECTOR ASSY 1B1	IN 017755
2	25169003	F	CONNECTOR ASSY 1C1	IN 017755
2	25169004	E	CONNECTOR ASSY 1D1	IN 017755
2	25169005	F	CONNECTOR ASSY 1A2	IN 017755
2	25169006	F	CONNECTOR ASSY 1B2	IN 017755
2	25169007	F	CONNECTOR ASSY 1C2	IN 017755
2	25169008	F	CONNECTOR ASSY 1D2	IN 017755
2	25171901	N	WIRE TAB CARD PUNCH CONT	IN 016071
3	24511402	K	LEAD, ELECTRICAL, 2 INCH.	IN 016322
3	24511403	K	LEAD, ELECTRICAL, 3 INCH.	IN 016322
3	24511404	K	LEAD, ELECTRICAL, 4 INCH.	IN 018927
3	24511405	K	LEAD, ELECTRICAL, 5 INCH.	IN 018927
3	24511406	K	LEAD, ELECTRICAL, 6 INCH.	IN 009747
3	24511407	K	LEAD, ELECTRICAL, 7 INCH.	IN 018927
3	24511408	K	LEAD, ELECTRICAL, 8 INCH.	IN 016322
3	24511409	K	LEAD, ELECTRICAL, 9 INCH.	IN 016322
3	24511410	K	LEAD, ELECTRICAL, 10 INCH.	IN 011355
3	24511411	K	LEAD, ELECTRICAL, 11 INCH.	IN 016322
3	24511412	K	LEAD, ELECTRICAL, 12 INCH.	IN 011355
3	24511413	K	LEAD, ELECTRICAL, 13 INCH.	IN 016322
3	24511414	K	LEAD, ELECTRICAL, 14 INCH.	IN 011981
3	24511415	K	LEAD, ELECTRICAL, 15 INCH.	IN 018927
3	24511416	K	LEAD, ELECTRICAL, 16 INCH.	IN 016322
3	24511417	K	LEAD, ELECTRICAL, 17 INCH.	IN 016322
3	24511418	K	LEAD, ELECTRICAL, 18 INCH.	IN 011981
3	24511419	K	LEAD, ELECTRICAL, 19 INCH.	IN 015012
3	24511420	K	LEAD, ELECTRICAL, 20 INCH.	IN 009747
3	24511421	K	LEAD, ELECTRICAL, 21 INCH.	IN 016322
3	24511422	K	LEAD, ELECTRICAL, 22 INCH.	IN 020524
3	24511423	K	LEAD, ELECTRICAL, 23 INCH.	IN 020524
3	24511424	K	LEAD, ELECTRICAL, 24 INCH.	IN 011981
3	24511425	K	LEAD, ELECTRICAL, 25 INCH.	IN 016322
3	24511426	K	LEAD, ELECTRICAL, 26 INCH.	IN 011981
3	24511427	K	LEAD, ELECTRICAL, 27 INCH.	IN 016322
3	24511428	K	LEAD, ELECTRICAL, 28 INCH.	IN 020524
3	24511429	K	LEAD, ELECTRICAL, 29 INCH.	IN 016322
3	24511430	K	LEAD, ELECTRICAL, 30 INCH.	IN 020524
3	24511431	K	LEAD, ELECTRICAL, 31 INCH.	IN 016322
3	24511432	K	LEAD, ELECTRICAL, 32 INCH.	IN 015012
3	24511433	K	LEAD, ELECTRICAL, 33 INCH.	IN 020524

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

L F V E L

	PART-NO	REV	DESCRIPTION	ECO-NO
3	24511436	K	LEAD, ELECTRICAL, 36 INCH.	IN 018927
3	24511440	K	LEAD ELECT 2.25 IN. SOLID BLK	IN 020524
3	24511441	K	LEAD ELECT 2.25 IN. SOLID RED	IN 020524
3	24511442	K	LEAD ELECT 2.25 IN. SOLID BLU	IN 020524
2	25172000	D	CABLE WIRING TABULATION	IN 018076
2	25176500	A	BRACKET SWITCH	IN
2	25184100	A	BRACKET TERMINAL STRIP	IN
2	25185101	A	WIRE LISTING POWER	IN 017522
3	18535801	D	TERMINAL SPADE FLANGED INS	IN 015813
3	24500706	J	PIN TAPER	IN 015813
3	24552335	D	INS SLEEVING 5/8 LG 11 AWG	IN 015813
3	93463000	D	WIRE ELECTRICAL 18 AWG -0	IN 015813
3	93463222	D	WIRE ELECTRICAL 18 AWG -2	IN 015813
3	93463666	D	WIRE ELECTRICAL 18 AWG -6	IN 015813
2	30002201	L	CAP FXD ELECTROLYTIC	IN 016071
2	30008700	C	BKT ANGLE CHASSIS FRAME	IN 016071
2	30013802	C	SPACER	IN 016071
2	30093502	C	CLIP SPRING TENSION	IN
2	30093614	A	COVER TERMINAL BOARD	IN
2	30094402	A	CONN RECEPT 10 CONTACT (RED)	IN 016071
2	30094406	A	CONN RECEPT 10 CONTACT (BLUE)	IN 016071
2	30094410	A	CONN RECEPT 10 CONTACT (BLACK)	IN 016071
2	30103800	B	PLATE, RETAINING, CABLE	IN 016071
2	30103900	C	STUD, EXTENSION	IN 016071
2	30104600	D	SUPPORT CONN, ASSY	IN
2	30104800	J	HINGE, I/O CONNECTOR PANEL	IN 016071
2	30116600	B	BRACKET MOUNTING SHIELD	IN 016071
2	30980001	B	MEM-3644-FNL ASSY	IN 015097
3	00866901	A	SPACER 1/4 OD MET 1/8 L	IN
3	00866905	A	SPACER 1/4 OD MET 3/4 L	IN
3	09017817	A	SCR MACH PAN HD SLOT NO. 6	IN 010938
3	09026205	A	NUT, HEXAGON	IN
3	09027802	J	WASHER, NONMETALLIC	IN
3	24501805	D	WIRE ELECT SOLID COPPER 26 GA	IN
3	30980201	A	MEM- -PL1-SUB-ASSY	IN 014097
4	17698701	E	WIRE ELEC STRD INS UL APPD	IN
4	17698702	E	WIRE ELEC STRD INS UL APPD	IN
4	17698703	E	WIRE ELEC STRD INS UL APPD	IN
4	17698704	E	WIRE ELEC STRD INS UL APPD	IN
4	17698705	E	WIRE ELEC STRD INS UL APPD	IN
4	17698711	E	WIRE ELEC STRD INS UL APPD	IN
4	17698712	E	WIRE ELEC STRD INS UL APPD	IN
4	17698713	E	WIRE ELEC STRD INS UL APPD	IN
4	17698714	E	WIRE ELEC STRD INS UL APPD	IN
4	17698715	E	WIRE ELEC STRD INS UL APPD	IN
4	17698716	E	WIRE ELEC STRD INS UL APPD	IN
4	17698717	E	WIRE ELEC STRD INS UL APPD	IN
4	17698718	E	WIRE ELEC STRD INS UL APPD	IN
4	17698719	E	WIRE ELEC STRD INS UL APPD	IN
4	17698720	E	WIRE ELEC STRD INS UL APPD	IN
4	17698721	E	WIRE ELEC STRD INS UL APPD	IN
4	17698722	E	WIRE ELEC STRD INS UL APPD	IN
4	17698723	E	WIRE ELEC STRD INS UL APPD	IN

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

L E V E L	PART-NO	REV	DESCRIPTION	ECO-NO
4	17698724	E	WIRE ELEC STRD INS UL APPD	IN
4	17698725	E	WIRE ELFC STRD INS UL APPD	IN
4	17698726	E	WIRE ELFC STRD INS UL APPD	IN
4	17698727	E	WIRE ELFC STRD INS UL APPD	IN
4	17698728	E	WIRE ELEC STRD INS UL APPD	IN
4	24500701	J	PIN TAPER	IN
4	24500801	H	INSULATION SLEEVING ELECT	IN
4	24522100	A	CORE, FERRITE-MEMORY	IN
4	24524401	N	WIRE MAG RD POLY 33 GA RED	IN
3	30980401	A	MEM ,PL2-SUB-ASSY	IN 014097
4	17698705	E	WIRE ELEC STRD INS UL APPD	IN
4	17698706	E	WIRE ELEC STRD INS UL APPD	IN
4	17698707	E	WIRE ELEC STRD INS UL APPD	IN
4	17698708	E	WIRE ELEC STRD INS UL APPD	IN
4	17698709	E	WIRE ELEC STRD INS UL APPD	IN
4	17698710	E	WIRE ELEC STRD INS UL APPD	IN
4	17698712	E	WIRE ELEC STRD INS UL APPD	IN
4	17698713	E	WIRE ELEC STRD INS UL APPD	IN
4	17698714	E	WIRE ELEC STRD INS UL APPD	IN
4	17698715	E	WIRE ELFC STRD INS UL APPD	IN
4	17698716	E	WIRE ELEC STRD INS UL APPD	IN
4	17698717	E	WIRE ELEC STRD INS UL APPD	IN
4	17698718	E	WIRE ELEC STRD INS UL APPD	IN
4	17698719	E	WIRE ELEC STRD INS UL APPD	IN
4	17698720	E	WIRE ELEC STRD INS UL APPD	IN
4	17698721	E	WIRE ELEC STRD INS UL APPD	IN
4	17698722	E	WIRE ELEC STRD INS UL APPD	IN
4	17698723	E	WIRE ELFC STRD INS UL APPD	IN
4	17698724	E	WIRE ELFC STRD INS UL APPD	IN
4	17698725	E	WIRE ELEC STRD INS UL APPD	IN
4	17698726	E	WIRE ELFC STRD INS UL APPD	IN
4	17698727	E	WIRE ELEC STRD INS UL APPD	IN
4	17698728	E	WIRE ELEC STRD INS UL APPD	IN
4	24500701	J	PIN TAPER	IN
4	24500801	H	INSULATION SLEEVING ELECT	IN
4	24522100	A	CORE, FERRITE-MEMORY	IN
4	24524401	N	WIRE MAG RD POLY 33 GA RED	IN
3	30980500	A	SHIELD- MEMORY	IN
1	18219800	B	WIRED CHASSIS ASSY	IN 020524
1	18669800	B	TERMINATOR POWER CABLE ASSY	IN 016690
2	17620300	C	STRAP CABLE ADJUSTABLE	IN
2	18535804	D	TERMINAL SPADE FLANGED INS	IN 018922
2	24528617	G	INS SLEEVING, ELEC-BULK	IN 018922
2	93464222	C	WIRE ELECTRICAL 16 AWG -2	IN
2	93464666	C	WIRE ELECTRICAL 16 AWG -6	IN
1	22901101	B	STRIP, MARKER, SHORT WIDE	IN 020524
1	22901102	B	STRIP, MARKER, SHORT WIDE	IN 020524
1	22901103	B	STRIP, MARKER, SHORT WIDE	IN 020524
1	22901201	B	STRIP, MARKER, SHORT NARROW	IN 020524
1	22901202	B	STRIP, MARKER, SHORT NARROW	IN 020524
1	22901203	B	STRIP, MARKER, SHORT NARROW	IN 020524
1	22901301	C	STRIP, MARKER, LONG WIDE	IN 020524
1	22901302	C	STRIP, MARKER, LONG WIDE	IN 020524

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

LEVEL	PART-NO	REV	DESCRIPTION	ECO-NO
1	22901401	B	STRIP, MARKER, LONG NARROW	IN 020524
1	22901402	B	STRIP, MARKER, LONG NARROW	IN 020524
1	24500703	J	PIN TAPER	IN 020524
1	24500801	H	INSULATION SLEEVING ELECT	IN 020524
1	24501214	A	STRIP TERMINAL	IN 020524
1	24502214	C	STRIP MARKER 1 THRU 14	IN 020524
1	24507502	D	SWITCH ROTARY (6 POLE) (8 POS)	IN 020524
1	24511440	K	LEAD ELECT 2.25 IN. SOLID BLK	IN 020524
1	24511441	K	LEAD ELECT 2.25 IN. SOLID RED	IN 020524
1	24511442	K	LEAD ELECT 2.25 IN. SOLID BLU	IN 020524
1	24512302	J	LAMP, INCANDESCENT	IN 020524
1	24513200	A	RELAY 6 V	IN 020524
1	24518500	A	PIN, GROUND	IN 020524
1	24519600	B	SOCKET, RELAY 10 PIN	IN 020524
1	24519700	A	RETAINER, SPRING-RELAY SOCKET	IN 020524
1	24535400	C	SWITCH TOGGLE DPDT 2 POSITION	IN 020524
1	24542101	B	BINDING POST ELECT BLACK	IN 020524
1	24542700	B	INDICATOR LAMPHOLDER	IN 020524
1	24543801	A	JUMPER, TERMINAL STRIP	IN 020524
1	24548303	J	WIRE ELEC STRD INS. UL APPD	IN 020524
1	24548307	J	WIRE ELEC STRD INS. UL APPD	IN 020524
1	25151702	K	POWER SUPPLY ASSY, 400 CYCLE	IN 016460
2	00836603	C	RETAINER, NUT, SPEED	IN
2	00852001	H	FAN, MUFFIN	IN 012779
2	00861303	A	NUT, SELF-LOCKING CAP	IN
2	00863801	C	KNOB, CONTROL	IN
2	09005309	A	SCR MACH FH SLOT 1/4	IN
2	09018504	A	SCR MACH PAN HD PHL NO. 8	IN
2	09018632	B	SCR MACH PAN HD PHL NO. 10	IN
2	10125103	A	HEXAGON MACHINE SCREW NUTS	IN
2	10125105	A	HEXAGON MACHINE SCREW NUTS	IN
2	10125106	A	HEXAGON MACHINE SCREW NUTS	IN
2	10125301	A	HEXAGON NUTS	IN
2	10125606	A	PLAIN WASHERS	IN
2	10126101	A	INTERNAL TOOTH LOCK WASHERS	IN
2	10126103	A	INTERNAL TOOTH LOCK WASHERS	IN
2	10126104	A	INTERNAL TOOTH LOCK WASHERS	IN
2	10126105	A	INTERNAL TOOTH LOCK WASHERS	IN
2	10126106	A	INTERNAL TOOTH LOCK WASHERS	IN
2	10127111	A	SCR MACH PAN PHL 6-32	IN
2	10127113	A	SCR MACH PAN PHL 6-32	IN
2	10127115	A	SCR MACH PAN PHL 6-32	IN
2	10127121	A	SCR MACH PAN PHL 8-32	IN
2	10127123	A	SCR MACH PAN PHL 8-32	IN
2	10127124	A	SCR MACH PAN PHL 8-32	IN
2	10127125	A	SCR MACH PAN PHL 8-32	IN
2	18263600	A	POWER SUPPLY IDENT PLATE	IN 014401
2	18877100	G	RECTIFIER ASSEMBLY	IN 018288
3	00855012	A	STANDOFF RUB. WITH THD INSERT	IN 018504
3	17901509	G	6-32 SCR THD ROLL PHL H PAN	IN 020524
3	18700100	D	RECTIFIER, SILICON, 10 AMPERE	IN
3	18876900	D	HEAT SINK	IN
4	18877000	A	EXTRUSION HEAT SINK	IN 020524

REV T

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

L E V E L	PART-NO	REV	DESCRIPTION	ECO-NO
3	93464666	C	WIRE ELECTRICAL 16 AWG -6	IN 018801
2	18877101	G	RECTIFIER ASSEMBLY	IN 018288
3	00855012	A	STANDOFF RUB. WITH THD INSERT	IN 018504
3	17901509	G	6-32 SCR THD ROLL PHL H PAN	IN 020254
3	18700101	D	RECTIFIER SILICON 10 AMP	IN
3	18876900	D	HEAT SINK	IN
4	18877000	A	EXTRUSION HEAT SINK	IN 020524
3	93464222	C	WIRE ELECTRICAL 16 AWG -2	IN
2	24501208	A	STRIP TERMINAL	IN
2	24501502	B	STRIP TERMINAL	IN
2	24501504	B	STRIP TERMINAL	IN
2	24502208	C	STRIP MARKER 1 THRU 8	IN
2	24503101	F	CONT 15 AMP 3P-NO	IN
2	24508600	A	FUSEHOLDER-INDICATING	IN
2	24512901	B	FUSE FAST ACTION	IN
2	24518101	H	CONN FLEX. CND AND CABLE	IN 012779
2	24518103	H	CONN FLEX. CND AND CABLE	IN 012779
2	25154600	J	FRAME, POWER SUPPLY	IN
2	25157500	A	COVER POWER SUPPLY	IN 012779
2	25160700	B	GRILL, POWER SUPPLY	IN
3	00849900	A	METAL PERF STR SLOTS 1/4X1 1/	IN
2	25160900	B	STRIKE LATCH - PWR SUP	IN
2	25170501	D	WIRE TAB PWR SUP GR 2 400 CYC	IN
3	17620300	C	STRAP CABLE ADJUSTABLE	IN 013656
3	17924502	A	LABEL WIRE MARK 1 THRU 33	IN 013656
3	24500513	F	CABLE PWR ELECT 16 GA 3 COND	IN
3	24500525	F	CABLE PWR ELECT 14 GA 5 COND	IN
3	24528616	G	INS SLEEVING, ELEC-BULK	IN 013656
3	24536103	K	TERMINAL, SOLDERLESS RING	IN
3	24536109	K	TERMINAL, SOLDERLESS RING	IN
3	93463000	D	WIRE ELECTRICAL 18 AWG -0	IN 013656
3	93463222	D	WIRE ELECTRICAL 18 AWG -2	IN 013656
3	93463333	D	WIRE ELECTRICAL 18 AWG -3	IN 013656
3	93463444	D	WIRE ELECTRICAL 18 AWG -4	IN 013656
3	93463666	D	WIRE ELFCTRICAL 18 AWG -6	IN 013656
3	93463999	D	WIRE ELFCTRICAL 18 AWG -9	IN 013656
3	93464000	C	WIRE ELECTRICAL 16 AWG -0	IN 013656
3	93464222	C	WIRE ELECTRICAL 16 AWG -2	IN 013656
3	93464444	C	WIRE ELECTRICAL 16 AWG -4	IN 013656
3	93464555	C	WIRE ELECTRICAL 16 AWG -5	IN 013656
3	93464666	C	WIRE ELECTRICAL 16 AWG -6	IN 013656
3	93464999	C	WIRE ELECTRICAL 16 AWG -9	IN 013656
2	25185901	D	WIRE LISTING-CABLE ASSY	IN 012779
3	17620300	C	STRAP CABLE ADJUSTABLE	IN 012728
3	18535813	D	TERMINAL SPADE FLANGED INS	IN
3	18535820	D	TERM SPADE FLGD INSULATED	IN
3	24528638	G	INS SLEEVING, ELEC-BULK	IN 014394
3	93464000	C	WIRE ELECTRICAL 16 AWG -0	IN 014394
3	93464222	C	WIRE ELECTRICAL 16 AWG -2	IN 014394
3	93464666	C	WIRE ELECTRICAL 16 AWG -6	IN 014394
2	30002000	E	TRANSFORMER VARIABLE-POWER	IN
2	30002100	F	REACTOR-TRANSFORMER-16V	IN
2	30002503	K	CIRCUIT BREAKER 3 POLE AUX SW	IN

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

L E V E L	PART-NO	REV	DESCRIPTION	ECO-NO
2	30091301	H	VOLTMETER 25 VDC	IN 012779
2	30108301	K	LEAF HINGE L.H.	IN
2	52305600	A	P.S. +12V 370-500 HZ R.H.	IN 019974
2	60120700	K	CONTROL DATA POWER SUPPLIES	IN 019974
1	25151801	L	PERIPHERAL CAB ASSY TYPE B	IN 016460
2	00859300	A	CATCH FRICTION	IN
2	00859802	A	CATCH FRICTION, STRIKE	IN
2	00861000	A	BALL, BEARING	IN
2	00863701	A	CLAMP, CABLE ELECTRICAL	IN
2	00863708	A	CLAMP, CABLE ELECTRICAL	IN
2	09005307	A	SCR MACH FH SLOT 1/4	IN
2	09024304	A	SCR MACH HEX HD TRIMMED 1/4	IN
2	09024307	A	SCR MACH HEX HD TRIMMED 1/4	IN
2	09024309	A	SCR MACH HEX HD TRIMMED 1/4	IN
2	09029702	A	SCREW, NICKEL BLACK	IN
2	09031601	A	SCR CAP SOCKET BUT HD NO. 8	IN
2	09040203	A	WASHER LOCK - DISH TYPE	IN
2	09040209	A	WASHER-LOCK-DISH TYPE	IN
2	09040700	A	CABLE, WIRE, COATED	IN
2	10125061	A	HEX HD MACH SCR 10-32	IN
2	10125105	A	HEXAGON MACHINE SCREW NUTS	IN
2	10125106	A	HEXAGON MACHINE SCREW NUTS	IN
2	10125108	A	HEXAGON MACHINE SCREW NUTS	IN
2	10125301	A	HEXAGON NUTS	IN
2	10125444	A	82 FH MACH SCR SLOT DR 6-32	IN
2	10125448	A	82 FH MACH SCR SLOT DR 6-32	IN
2	10125459	A	82 FH MACH SCR SLOT DR 8-32	IN
2	10125493	A	82 FH MACH SCR SLOT DR 10-32	IN
2	10125605	A	PLAIN WASHERS	IN
2	10125606	A	PLAIN WASHERS	IN
2	10125607	A	PLAIN WASHERS	IN
2	10125608	A	PLAIN WASHERS	IN
2	10126104	A	INTERNAL TOOTH LOCK WASHERS	IN
2	10126105	A	INTERNAL TOOTH LOCK WASHERS	IN
2	10126106	A	INTERNAL TOOTH LOCK WASHERS	IN
2	10127113	A	SCR MACH PAN PHL 6-32	IN
2	10127114	A	SCR MACH PAN PHL 6-32	IN
2	10127123	A	SCR MACH PAN PHL 8-32	IN
2	10127124	A	SCR MACH PAN PHL 8-32	IN
2	10127142	A	SCR MACH PAN PHL 10-32	IN
2	10127144	A	SCR MACH PAN PHL 10-32	IN
2	11554202	A	RETAINER CABLE	IN
2	11554302	A	CLAMP, CABLE	IN
2	17901510	G	6-32 SCR THD ROLL PHL H PAN	IN
2	17981114	P	LENS INDICATOR CORPORATE SW	IN 012666
2	23293300	B	EMBLEM, PRODUCT IDENTIFICATION	IN 020805
2	24511766	L	LENS, IND. LIGHT	IN
2	24515807	A	LAMP, INCANDESCENT	IN
2	24524201	A	FILTER LENS - CAP IND LT	IN 011506
2	24524202	A	FILTER LENS - CAP IND LT	IN 011506
2	24536900	B	CONN RECEPT, ELECT - 3 WIRE	IN 011506
2	24541301	D	PLATE IDENT 1 3/4X3 1/2	IN
2	24543546	U	LENS, IND. LIGHT	IN

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

LEVEL	PART-NO	REV	DESCRIPTION	ECO-NO
2	24543549	U	LENS, IND. LIGHT	IN
2	25151201	A	RIM LATCH-POWER SUPPLY	IN
2	25151301	E	BLOWER ASSY	IN
3	00813400	A	GROMMET RUBBER 1/4 I.D.	IN
3	00838300	A	NUT U TYPE 8-32 NC	IN
3	00865300	B	CLAMP FAN	IN
3	00866102	C	VANE, ACTUATOR	IN
3	10125103	A	HEXAGON MACHINE SCREW NUTS	IN
3	10125105	A	HEXAGON MACHINE SCREW NUTS	IN
3	10125605	A	PLAIN WASHERS	IN 013274
3	10126101	A	INTERNAL TOOTH LOCK WASHERS	IN
3	10126103	A	INTERNAL TOOTH LOCK WASHERS	IN
3	10127105	A	SCR MACH PAN PHL 4-40	IN
3	10127107	A	SCR MACH PAN PHL 4-40	IN
3	10127113	A	SCR MACH PAN PHL 6-32	IN
3	10127114	A	SCR MACH PAN PHL 6-32	IN
3	10127115	A	SCR MACH PAN PHL 6-32	IN 013274
3	24501204	A	STRIP TERMINAL	IN
3	24502204	C	STRIP MARKER 1 THRU 4	IN
3	24536500	C	FAN AXIAL 270 CFM	IN
3	24548200	B	SWITCH, ROTARY LOW FORCE, N.C	IN
3	25158100	D	PLENUM, LOWER	IN
3	25158200	E	PLENUM UPPER	IN
3	25158301	C	PLATE, FAN MTG	IN
3	25167300	A	BRACKET, THERMOSTAT	IN
3	25167400	A	BRACKET, VELOCITY SWITCH	IN
3	25172600	A	WIRE TAB BLOWER ASSEMBLY	IN
3	30093502	C	CLIP SPRING TENSION	IN 013274
3	30093604	A	COVER TERMINAL BOARD	IN 013274
3	30096206	A	THERMOSTAT BKT MTG 80 DEG CL	IN
3	93464666	C	WIRE ELECTRICAL 16 AWG -6	IN
2	25151501	A	LOWER PANEL ASSY	IN
2	25152401	B	DOOR ASSY-REAR LEFT	IN
3	00859801	A	CATCH FRICTION, CATCH	IN
3	10125605	A	PLAIN WASHERS	IN
3	10126103	A	INTERNAL TOOTH LOCK WASHERS	IN
3	10126219	A	HEX SCH CAP SCR (1960SER)6-32	IN
3	10127113	A	SCR MACH PAN PHL 6-32	IN
3	17901520	G	8-32 SCR THD ROLL PHL H PAN	IN
3	25156400	D	PANEL, REAR DOOR	IN
4	25156401	D	CRS 16 GA (.059)	IN 019810
4	25156402	D	CRS 16 GA (.059)	IN 019810
4	25156403	D	EXPANDED METAL (00860901)	IN 019810
4	25156404	D	CRS 16 GA (.059)	IN 019810
3	25156600	A	MEMBER FR DR HANDLE SIDE LH	IN
4	30003400	A	ALUMINUM ALLOY SPECIAL SHAPED	IN
3	25159800	D	MEMBER FRAME DOOR-TOP AND BOT	IN
4	30005400	A	AL ALY DOOR FRAME	IN
3	25159900	D	MEMBER FRAME DOOR-TOP AND BOT	IN 012772
4	30005400	A	AL ALY DOOR FRAME	IN
3	25162400	A	MEMBER FR DR HINGE SIDE LH	IN 012772
4	30003300	B	ALUMINUM ALLOY SPECIAL SHAPED	IN
2	25152501	B	DOOR ASSY-REAR RIGHT	IN

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

L E V E L	PART-NO	REV	DESCRIPTION	ECO-NO
3	00859801	A	CATCH FRICTION, CATCH	IN
3	10125605	A	PLAIN WASHERS	IN
3	10126103	A	INTERNAL TOOTH LOCK WASHERS	IN
3	10126219	A	HEX SCH CAP SCR (1960SER)6-32	IN
3	10127113	A	SCR MACH PAN PHL 6-32	IN
3	17901520	G	8-32 SCR THD ROLL PHL H PAN	IN
3	25156200	A	MEMBER FR DR HINGE SIDE RH	IN
4	30003300	B	ALUMINUM ALLOY SPECIAL SHAPED	IN
3	25156500	A	MEMBER FR DR HANDLE SIDE RH	IN
4	30003400	A	ALUMINUM ALLOY SPECIAL SHAPED	IN
3	25159800	D	MEMBER FRAME DOOR-TOP AND BOT	IN
4	30005400	A	AL ALY DOOR FRAME	IN
3	25159900	D	MEMBER FRAME DOOR-TOP AND BOT	IN
4	30005400	A	AL ALY DOOR FRAME	IN
3	25170701	A	PANEL, REAR DOOR	IN
2	25152601	D	DOOR ASSY-FRONT LEFT	IN
3	00857001	A	CLIP, THUMB	IN
3	00859801	A	CATCH FRICTION, CATCH	IN 011503
3	10125605	A	PLAIN WASHERS	IN 012772
3	10126103	A	INTERNAL TOOTH LOCK WASHERS	IN
3	10126219	A	HEX SCH CAP SCR (1960SER)6-32	IN
3	10127113	A	SCR MACH PAN PHL 6-32	IN
3	10127115	A	SCR MACH PAN PHL 6-32	IN
3	10127116	A	SCR MACH PAN PHL 6-32	IN
3	17936500	B	EXTRUSION WINDOW MOULDING	IN 013617
3	25155201	F	FRAME OBSERVATION WINDOW	IN
4	00860901	A	EM CS-26 GA	IN
4	30107700	E	FRAME OBSERVATION WINDOW	IN
3	25156000	F	WINDOW OBSERVATION DOOR	IN
4	17936602	D	GLASS WINDOW DOOR	IN
3	25156600	A	MEMBER FR DR HANDLE SIDE LH	IN
4	30003400	A	ALUMINUM ALLOY SPECIAL SHAPED	IN
3	25159800	D	MEMBER FRAME DOOR-TOP AND BOT	IN
4	30005400	A	AL ALY DOOR FRAME	IN
3	25159900	D	MEMBER FRAME DOOR-TOP AND BOT	IN
4	30005400	A	AL ALY DOOR FRAME	IN
3	25162400	A	MEMBER FR DR HINGE SIDE LH	IN
4	30003300	B	ALUMINUM ALLOY SPECIAL SHAPED	IN
3	30107700	E	FRAME OBSERVATION WINDOW	IN
3	30112800	B	SEAL RUBBER SPL SHAPED SECT	IN
2	25152701	C	DOOR ASSY-FRONT RIGHT	IN
3	00857001	A	CLIP, THUMB	IN
3	00859801	A	CATCH FRICTION, CATCH	IN 012772
3	10125605	A	PLAIN WASHERS	IN 012772
3	10126103	A	INTERNAL TOOTH LOCK WASHERS	IN
3	10126219	A	HEX SCH CAP SCR (1960SER)6-32	IN
3	10127113	A	SCR MACH PAN PHL 6-32	IN
3	10127115	A	SCR MACH PAN PHL 6-32	IN
3	10127116	A	SCR MACH PAN PHL 6-32	IN
3	17936500	B	EXTRUSION WINDOW MOULDING	IN 013617
3	25155202	F	FRAME OBSERVATION WINDOW	IN 012772
4	00860901	A	EM CS 26 GA	IN
4	30107700	E	FRAME OBSERVATION WINDOW	IN

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

LEVEL	PART-NO	REV	DESCRIPTION	ECO-NO
3	25156000	F	WINDOW OBSERVATION DOOR	IN
4	17936602	D	GLASS WINDOW DOOR	IN
3	25156200	A	MEMBER FR DR HINGE SIDE RH	IN
4	30003300	B	ALUMINUM ALLOY SPECIAL SHAPED	IN
3	25156500	A	MEMBER FR DR HANDLE SIDE RH	IN
4	30003400	A	ALUMINUM ALLOY SPECIAL SHAPED	IN
3	25159800	D	MEMBER FRAME DOOR-TOP AND BOT	IN
4	30005400	A	AL ALY DOOR FRAME	IN
3	25159900	D	MEMBER FRAME DOOR-TOP AND BOT	IN
4	30005400	A	AL ALY DOOR FRAME	IN
3	30107700	E	FRAME OBSERVATION WINDOW	IN
3	30112800	B	SEAL RUBBER SPL SHAPED SECT	IN
2	25153600	B	BRACKET BALL MTG	IN
2	25154400	A	GUSSET TOP	IN
2	25154700	A	GUSSET LOWER	IN
2	25154800	G	FRAME TOP	IN
2	25154900	G	FRAME SIDE LEFT	IN
2	25155000	D	FRAME SIDE RIGHT	IN
2	25155100	A	ANGLE MTG-END SKIN	IN
2	25155300	D	PANEL END	IN
2	25155700	B	PANEL TOP FULL	IN
2	25156100	A	BRKT, TOP PANEL	IN
2	25157300	G	BASE FULL	IN 014161
2	25157600	C	LEG,BASE	IN
2	25158401	A	RECEPTACLE, TURNLOCK FASTENER	IN
2	25158501	A	RECEP TURNLOCK FASTENER L.H.	IN
2	25160500	B	BLOCK CABLE RETAINER DOOR	IN
2	25160800	A	ANGLE DOOR LATCH TOP	IN
2	25161200	A	COVER, FILTER OPENING	IN
2	25161301	A	FILTER, MODIFICATION	IN
2	25175601	J	PANEL ASSY, TEMP MONITOR	IN
3	00838200	J	NUT U TYPE NO. 6-32NC	IN
3	09000402	B	SCR MACH BIND HD SLOT NO. 6	IN
3	09026401	A	NUT RING SPLINED	IN
3	10125105	A	HEXAGON MACHINE SCREW NUTS	IN
3	10125106	A	HEXAGON MACHINE SCREW NUTS	IN
3	10125605	A	PLAIN WASHERS	IN
3	10126103	A	INTERNAL TOOTH LOCK WASHERS	IN
3	10126104	A	INTERNAL TOOTH LOCK WASHERS	IN
3	10127112	A	SCR MACH PAN PHL 6-32	IN
3	10127124	A	SCR MACH PAN PHL 8-32	IN
3	24501506	B	STRIP TERMINAL	IN
3	24501510	B	STRIP TERMINAL	IN
3	24513600	E	SWITCH-TOGGLE DPDT	IN
3	24518201	C	CONN FLEX 90 DEG CONDUIT	IN 010620
3	24550602	G	CKT BRK SP 115V 60CPS	IN
3	24550801	J	RELAY, OCTAL SOCKET	IN 014124
3	25168700	A	COVER, CIRCUIT BREAKER	IN
3	25169600	D	PANEL TEMPERATURE MONITOR	IN
3	25177601	C	WIRE TABULATION TEMP MON PNL	IN
4	17620300	D	STRAP CABLE ADJUSTABLE	IN 015294
4	24528613	G	INS SLEEVING, ELEC-BULK	IN 015294
4	24547900	B	SOCKET, TUBE 8 CONTACT, OCTAL	IN 015294

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

LEVEL	PART-NO	REV	DESCRIPTION	ECO-NO
4	93462000	C	WIRE ELECTRICAL 20 AWG -0	IN 015294
4	93462111	C	WIRE ELECTRICAL 20 AWG -1	IN 015294
4	93462222	C	WIRE ELECTRICAL 20 AWG -2	IN 015294
4	93462333	C	WIRE ELECTRICAL 20 AWG -3	IN 015294
4	93462444	C	WIRE ELECTRICAL 20 AWG -4	IN 015294
4	93462555	C	WIRE ELECTRICAL 20 AWG -5	IN 015294
3	30092309	B	THERMOSTAT FL MT 110 DEG OPEN	IN
2	25175701	H	POWER BOX DISTRIBUTION	IN
3	00838300	A	NUT U TYPE 8-32 NC	IN
3	09040202	A	WASHER LOCK - DISH TYPE	IN
3	10125105	A	HEXAGON MACHINE SCREW NUTS	IN
3	10125606	A	PLAIN WASHERS	IN
3	10126104	A	INTERNAL TOOTH LOCK WASHERS	IN
3	10127115	A	SCR MACH PAN PHL 6-32	IN
3	10127120	A	SCR MACH PAN PHL 8-32	IN
3	10127121	A	SCR MACH PAN PHL 8-32	IN
3	10127122	A	SCR MACH PAN PHL 8-32	IN
3	24501601	G	BLOCK, TERMINAL	IN
3	24501603	G	BLOCK, TERMINAL	IN
3	24518101	H	CONN FLEX, CND AND CABLE	IN
3	24518201	C	CONN FLEX 90 DEG CONDUIT	IN
3	24518203	C	CONN FLEX 90 DEG CONDUIT	IN 011660
3	24550700	C	TRANSFORMER 24 VOLT	IN
3	25169300	D	BOX POWER DISTRIBUTION	IN
3	25169400	A	COVER, BOX - PWR DISTRIBUTION	IN
3	25169502	B	BUSS BAR DISTRIBUTION BOX	IN
2	25178001	F	CABLE ASSY-TEMP MONITOR PANEL	IN
3	17620300	C	STRAP CABLE ADJUSTABLE	IN 016640
3	18535801	D	TERMINAL SPADE FLANGED INS	IN 017829
3	24528635	G	INS SLEEVING, ELEC-BULK	IN
3	93462000	C	WIRE ELECTRICAL 20 AWG -0	IN
3	93462222	C	WIRE ELECTRICAL 20 AWG -2	IN
3	93462333	C	WIRE ELECTRICAL 20 AWG -3	IN
3	93462444	C	WIRE ELECTRICAL 20 AWG -4	IN
2	25179601	D	WIRE LIST PERIPH CAB TYPE B	IN
3	24500804	H	INSULATION SLEEVING ELECT	IN
3	24536103	K	TERMINAL, SOLDERLESS RING	IN
3	24536110	K	TERMINAL, SOLDERLESS RING	IN
3	24543801	A	JUMPER, TERMINAL STRIP	IN
3	93462111	C	WIRE ELECTRICAL 20 AWG -1	IN
3	93462333	C	WIRE ELECTRICAL 20 AWG -3	IN
3	93464999	C	WIRE ELECTRICAL 16 AWG -9	IN
3	93508000	B	WIRE ELECTRICAL 14 AWG -0	IN
3	93508555	B	WIRE ELECTRICAL 14 AWG -5	IN
3	93508999	B	WIRE ELECTRICAL 14 AWG -9	IN
2	25181901	C	ASSY CABLE PWR DISTRIBUTION	IN
3	17620300	C	STRAP CABLE ADJUSTABLE	IN 016139
3	18535801	D	TERMINAL SPADE FLANGED INS	IN 016139
3	18535804	D	TERMINAL SPADE FLANGED INS	IN 016139
3	24500512	F	CABLE PWR ELECT 16 GA 2 COND	IN 011655
3	24528615	G	INS SLEEVING, ELEC-BULK	IN 011655
3	93462333	C	WIRE ELECTRICAL 20 AWG -3	IN
3	93462555	C	WIRE ELECTRICAL 20 AWG -5	IN

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L E V E L	PART-NO	REV	DESCRIPTION	ECO-NO
3	93463000	D	WIRE ELECTRICAL 18 AWG -0	IN
3	93463444	D	WIRE ELECTRICAL 18 AWG -4	IN
2	25182001	B	CABLE ASSY-BLOWER JUMPER	IN
3	18535801	D	TERMINAL SPADE FLANGED INS	IN 016241
3	24528635	G	INS SLEEVING, ELEC-BULK	IN
3	93462333	C	WIRE ELECTRICAL 20 AWG -3	IN
3	93462555	C	WIRE ELECTRICAL 20 AWG -5	IN
3	93464000	C	WIRE ELECTRICAL 16 AWG -0	IN 011507
3	93464999	C	WIRE ELECTRICAL 16 AWG -9	IN 011507
2	25182101	C	CABLE ASSY-INDICATOR	IN
3	17620300	C	STRAP CABLE ADJUSTABLE	IN 013147
3	18535801	D	TERMINAL SPADE FLANGED INS	IN 017533
3	24500814	H	INSULATION SLEEVING ELECT	IN
3	24511601	D	LAMPHOLDER	IN 013147
3	24528635	G	INS SLEEVING, ELEC-BULK	IN
3	93462000	C	WIRE ELECTRICAL 20 AWG -0	IN
3	93462111	C	WIRE ELECTRICAL 20 AWG -1	IN
3	93462222	C	WIRE ELECTRICAL 20 AWG -2	IN
3	93462444	C	WIRE ELECTRICAL 20 AWG -4	IN
3	93462555	C	WIRE ELECTRICAL 20 AWG -5	IN
2	25184201	E	PLATE TERMINAL PWR CHASSIS	IN 012979
2	25188201	E	PERIPHERAL CAB SUB-ASSY	IN
2	30093414	A	STRIP TERM-MARKED 14 CONT	IN 016950
2	30093502	C	CLIP SPRING TENSION	IN
2	30093614	A	COVER TERMINAL BOARD	IN
2	30108100	F	LEAF, HINGE, LEFT HAND	IN
2	30115701	G	CASE, IDENT. PLATE	IN
1	25153000	D	MTG., BAR, CONNECTOR (01-90)	IN 020524
1	25153800	G	MEMBER FRAME CHAS-RIGHT SIDE	IN 020524
1	25153900	G	MEMBER FRAME CHAS LEFT SIDE	IN 020524
1	25154501	E	MEMBER, FR CHAS BOT AND TOP	IN 020524
1	25154502	E	MEMBER, FR CHAS BOT AND TOP	IN 020524
1	25156700	C	PLATE, RETAINING, ELEC. CONN.-	IN 020524
1	25156801	C	PL RETAINING ELEC. CONN	IN 020524
1	25156802	C	PL RETAINING ELEC. CONN	IN 020524
1	25157702	A	SHEET FILLER CHASSIS	IN 016460
1	25157800	A	BRACKET MTG MEMORY	IN 020524
1	25158000	A	PL DESIGNATION NARROW(05-18)	IN 020524
1	25159501	C	ASSY CARD SPACER 01-90	IN 010165
2	10035300	A	BAR CARD SPACER, NOTCHED	IN
2	10035403	A	BAR CARD SPACER NOTCHED SHORT	IN
2	10125446	A	82 FH MACH SCR SLOT DR 6-32	IN
2	10127123	A	SCR MACH PAN PHL 8-32	IN 016215
2	11486100	A	BAR CARD SPACER NOTCHED MOD	IN
2	25156901	C	COVER BAR-CARD SPACER	IN
2	92074012	P	O-RING	IN 016215
1	25159601	C	ASSY CARD SPACER 01-90	IN 010165
2	10035300	A	BAR CARD SPACER, NOTCHED	IN
2	10035403	A	BAR CARD SPACER NOTCHED SHORT	IN
2	10125446	A	82 FH MACH SCR SLOT DR 6-32	IN
2	10127123	A	SCR MACH PAN PHL 8-32	IN 016215
2	11486100	A	BAR CARD SPACER NOTCHED MOD	IN
2	25156902	C	COVER BAR-CARD SPACER	IN

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

L E V E L	PART-NO	REV	DESCRIPTION	ECO-NO
2	92074012	P	O-RING	IN 016215
1	25165400	A	PL DESIGNATION W (01-04)	IN 020524
1	25165500	A	PL DESIGNATION W (19-38)	IN 020524
1	25166201	H	SHIELD CONN RECP LETTERED	IN 020524
1	25166202	H	SHIELD CONN RECP LETTERED	IN 020524
1	25168901	F	CONN ASSY 1E1	IN 020524
1	25168902	F	CONN ASSY 1E2	IN 020524
1	25168903	F	CONN ASSY 1F1	IN 020524
1	25168904	F	CONN ASSY 1F2	IN 020524
1	25169001	E	CONNECTOR ASSY 1A1	IN 020524
1	25169002	E	CONNECTOR ASSY 1B1	IN 020524
1	25169003	E	CONNECTOR ASSY 1C1	IN 020524
1	25169004	E	CONNECTOR ASSY 1D1	IN 020524
1	25169005	E	CONNECTOR ASSY 1A2	IN 020524
1	25169006	E	CONNECTOR ASSY 1B2	IN 020524
1	25169007	E	CONNECTOR ASSY 1C2	IN 020524
1	25169008	E	CONNECTOR ASSY 1D2	IN 020524
1	25171901	N	WIRE TAB CARD PUNCH CONT	IN 020524
1	25172000	D	CABLE WIRING TABULATION	IN 020524
1	25173405	E	INSTALLATION KIT TYPE-B	IN 016460
2	09024307	A	SCR MACH HEX HD TRIMMED 1/4	IN
2	10125301	A	HEXAGON NUTS	IN
2	10126106	A	INTERNAL TOOTH LOCK WASHERS	IN
2	25159700	A	LATCH, CONNECTOR PANEL	IN 017524
2	25163101	A	SPACER CHASSIS	IN
2	25184501	A	CABLE ASSY POWER	IN
3	17620300	C	STRAP CABLE ADJUSTABLE	IN 016690
3	24524804	P	TERMINAL, LUG CRIMP-INSULATED	IN
3	24528638	G	INS SLEEVING, ELEC-BULK	IN
3	93464000	C	WIRE ELECTRICAL 16 AWG -0	IN
3	93464222	C	WIRE ELECTRICAL 16 AWG -2	IN
3	93464666	C	WIRE ELECTRICAL 16 AWG -6	IN
1	25176500	A	BRACKET SWITCH	IN 020524
1	25176901	A	CABLE ASSY POWER	IN 020524
1	25178401	K	CARD PLACEMENT	IN 020524

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25175301 AE CHASSIS ASSY CARD PUNCH CONT

LEVEL	PART-NO	REV	DESCRIPTION	ECO-NO
2	10005001	B	CARD ASSY TYPE 01A OSCILLATOR	IN 020524
2	17677900	A	CARD ASSY TYPE E07 RESISTOR	IN 020524
2	10201801	B	CARD ASSY TYPE 11A SINGLE INVERT.	IN 016322
2	10201901	B	CARD ASSY TYPE 12A SINGLE INVERT.	IN 016322
2	10202001	C	CARD ASSY TYPE 13A SINGLE INVERT.	IN 020524
2	10202501	B	CARD ASSY TYPE 14A SINGLE INVERT.	IN 020524
2	*17683900	G	CARD ASSY TYPE P14 XMTR	IN 020524
2	10202601	B	CARD ASSY TYPE 15A SINGLE INVERT.	IN 020524
2	10202701	B	CARD ASSY TYPE 16A SINGLE INVERT.	IN 020524
2	**17684500	A	CARD ASSY TYPE P16A RCVR	IN 020524
2	10202801	B	CARD ASSY TYPE 21A DOUBLE INVERT.	IN 016135
2	10203401	B	CARD ASSY TYPE 22A DOUBLE INVERT.	IN 016135
2	10203501	C	CARD ASSY TYPE 23A DOUBLE INVERT.	IN 020524
2	10203601	B	CARD ASSY TYPE 24A DOUBLE INVERT.	IN 020524
2	10232501	A	CARD ASSY TYPE 28A TRIPLE INVERT.	IN 016322
2	10232801	B	CARD ASSY TYPE 29A TRIPLE INVERT.	IN 009747
2	1033401	C	CARD ASSY TYPE 30A DOUBLE FF	IN 020524
2	10203701	B	CARD ASSY TYPE 31A F. F.	IN 016135
2	10203801	B	CARD ASSY TYPE 32A F. F.	IN 018927
2	10203901	B	CARD ASSY TYPE 33A F. F.	IN 018927
2	10339201	A	CARD ASSY TYPE 50A CAPACITOR	IN 020524
2	17685700	B	CARD ASSY TYPE 50 MEMORY DRIVE	IN 016135
2	17686300	C	CARD ASSY TYPE P52A MEMORY DIVT.	IN 020524
2	17687200	C	CARD ASSY TYPE P56A SENSE AMPL.	IN 020524
2	10336901	B	CARD ASSY TYPE 60A OUTPUT	IN 020524
2	10206001	B	CARD ASSY TYPE 61 INPUT	IN 020524
2	10005901	B	CARD ASSY TYPE 62 OUTPUT	IN 020524
2	10335201	A	CARD ASSY TYPE 73A VARIABLE DELAY	IN 020524
2	10211301	A	CARD ASSY TYPE 82 VARIABLE DELAY	IN 011981
2	10334701	A	CARD ASSY TYPE 85A MAGNET. PULL.	IN 020524
2	10337201	B	CARD ASSY TYPE 87 INPUT	IN 020524
2	24406901	J	CARD ASSY TYPE 97B DELAY	IN 009747
2	2441401	C	CARD ASSY TYPE 244141 CAPACITOR	IN 020524

1	25178500	A	PANEL, SWITCH MOUNTING	IN 020524
1	25184100	A	BRACKET TERMINAL STRIP	IN 020524
1	25185101	A	WIRE LISTING POWER	IN 020524
1	30002201	L	CAP FXD ELECTROLYTIC	IN 020524
1	30008700	C	BKT ANGLE CHASSIS FRAME	IN 020524
1	30013802	C	SPACER	IN 020524
1	30093502	C	CLIP SPRING TENSION	IN 020524

* JJA card (PN 50045500) in 3446-A/B with FV465-A is installed, and in 3446-C.
 ** PJB card (PN 50068900) in 3446-A/B with FV465-A is installed, and in 3446-C.

3446-B

25175301 AE CHASSIS ASSY CARD PUNCH CONT

LEVEL	PART-NO	REV	DESCRIPTION	ECO-NO
1	30093614	A	COVER TERMINAL BOARD	IN 020524
1	30094402	A	CONN RECEPT 10 CONTACT (RED)	IN 020524
1	30094406	A	CONN RECEPT 10 CONTACT (BLUE)	IN 020524
1	30094410	A	CONN RECEPT 10 CONTACT (BLACK)	IN 020524
1	30103800	B	PLATE, RETAINING, CABLE	IN 020524
1	30103900	C	STUD, EXTENSION	IN 020524
1	30104600	D	SUPPORT CONN, ASSY	IN 020524
1	30104800	J	HINGE, I/O CONNECTOR PANEL	IN 020524
1	30116600	B	BRACKET MOUNTING SHIELD	IN 020524
1	30980001	B	MEM- -FNL ASSY	IN 020524

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PART 4

CARD PLACEMENT





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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
B01	P56	S001	S002	S003	S004		B19	P56	S073	S074	S075	S076	
B02	P56	S005	S006	S007	S008		B20	P56	S077	S078	S079	S080	
B03	P56	S009	S010	S011	S012		B21	P52A		D040			
B04	P56	S013	S014	S015	S016		B22	P52A		D041			
B05	P56	S017	S018	S019	S020		B23	P52A		D030			
B06	P56	S021	S022	S023	S024		B24	P52A		D031			
B07	P56	S025	S026	S027	S028		B25	22	H001		H002		
B08	P56	S029	S030	S031	S032		B26	22	H003		H004		
B09	P56	S033	S034	S035	S036		B27	22	H005		H006		
B10	P56	S037	S038	S039	S040		B28	22	H007		H008		
B11	P56	S041	S042	S043	S044		B29	22	H009		H010		
B12	P56	S045	S046	S047	S048		B30	22	H011		H012		
B13	P56	S049	S050	S051	S052		B31	22	H013		H014		
B14	P56	S053	S054	S055	S056		B32	22	H015		H016		
B15	P56	S057	S058	S059	S060		B33	22	H017		H018		
B16	P56	S061	S062	S063	S064		B34	22	H019		H020		
B17	P56	S065	S066	S067	S068		B35	22	H021		H022		
B18	P56	S069	S070	S071	S072		B36	22	H023		H024		



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
B37	22	H025		H026			B55	22	H061		H062		
B38	22	H027		H028			B56	22	H063		H064		
B39	22	H029		H030			B57	22	H065		H066		
B40	22	H031		H032			B58	22	H067		H068		
B41	22	H033		H034			B59	22	H069		H070		
B42	22	H035		H036			B60	22	H071		H072		
B43	22	H037		H038			B61	22	H073		H074		
B44	22	H039		H040			B62	22	H075		H076		
B45	22	H041		H042			B63	22	H077		H078		
B46	22	H043		H044			B64	22	H079		H080		
B47	22	H045		H046			B65	11		N090			
B48	22	H047		H048			B66	11		N091			
B49	22	H049		H050			B67	11		N092			
B50	22	H051		H052			B68	11		N093			
B51	22	H053		H054			B69	11		N094			
B52	22	H055		H056			B70	11		N095			
B53	22	H057		H058			B71	11		N096			
B54	22	H059		H060			B72	11		N097			



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
B73	11		N098										
B74	11		N099										
B75	21	N088		N089									
B76	24	A600		A601									
B77	24	A602		A603									
B78	24	A604		A605									
B79	24	A606		A607									
B80	24	A608		A609									
B81	24	A610		A611									
B82	24	A612		A613									
B83	22	A620		A621									
B84	22	A622		A623									
B85	24	A630		A631									
B86	24	A614		A615									
B87	24	A616		A617									
B88	24	A618		A619									
B89	32	A040		A041									
B90	31	A042		A043									



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
C01	P50		G022				C19	P50		G020			
C02	P50		G023				C20	P50		G021			
C03	P50		G024				C21	P50		G026			
C04	P50		G025				C22	P50		G027			
C05	↑						C23	P50		G030			
C06							C24	P50		G031			
C07							C25	P50		G032			
C08							C26	32	C000		C001		
C09	12 x 80						C27	31	C002		C003		
C10	Core						C28	32	C010		C011		
C11	Memory						C29	31	C012		C013		
C12							C30	32	C020		C021		
C13							C31	31	C022		C023		
C14							C32	32	C030		C031		
C15							C33	31	C032		C033		
C16							C34	32	C040		C041		
C17							C35	31	C042		C043		
C18	↓						C36	32	C050		C051		



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
C37	31	C052		C053			C55	29	H116	H117	H118		
C38	31	C060		C061			C56	29	H119	H120	H121		
C39	12		N050				C57	29	H122	H123	H124		
C40	12		N057				C58	29	H125	H126	H127		
C41	14		N056				C59	29	H128	H129	H130		
C42	11		N055				C60	29	H131	H132	H133		
C43	11		N054				C61	29	H134	H135	H136		
C44	11		N053				C62	29	H137	H138	H139		
C45	22	N051		N052			C63	29	H140	H141	H142		
C46	21	N058		N059			C64	29	H143	H144	H145		
C47	21	C004		C005			C65	29	H146	H147	H148		
C48	21	C014		C015			C66	29	H149	H150	H151		
C49	21	C024		C025			C67	29	H152	H153	H154		
C50	29	H101	H102	H103			C68	29	H155	H156	H157		
C51	29	H104	H105	H106			C69	29	H158	H159	H160		
C52	29	H107	H108	H109			C70	29	H161	H162	H163		
C53	29	H110	H111	H112			C71	29	H164	H165	H166		
C54	29	H113	H114	H115			C72	29	H167	H168	H169		



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
C73	29	H170	H171	H172									
C74	29	H173	H174	H175									
C75	29	H176	H177	H178									
C76	29	H179	H180	S543									
C77	32	A400		A401									
C78	31	A402		A403									
C79	32	A410		A411									
C80	31	A412		A413									
C81	32	A420		A421									
C82	31	A422		A423									
C83	32	A430		A431									
C84	31	A432		A433									
C85	32	A440		A441									
C86	31	A442		A443									
C87	32	A450		A451									
C88	31	A452		A453									
C89	31	A460		A461									
C90	13		A471										



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
D01	P52A		D020				D19	P50		G004			
D02	P52A		D021				D20	P50		G005			
D03	P52A		D022				D21	P50		G006			
D04	P52A		D023				D22	P50		G007			
D05	P52A		D024				D23	P50		G008			
D06	P52A		D025				D24	P50		G009			
D07	P52A		D026				D25	P50		G010			
D08	P52A		D027				D26	P50		G011			
D09	P52A		D028				D27	29	B300	B301	B302		
D10	P52A		D029				D28	29	B303	B304	B305		
D11	P50		G033				D29	29	B306	B307	B308		
D12	P50		G034				D30	29	B309	B310	B311		
D13	P50		G035				D31	24	B200		B203		
D14	P50		G036				D32	24	B201		B202		
D15	P50		G000				D33	24	B204		B205		
D16	P50		G001				D34	24	B206		B207		
D17	P50		G002				D35	24	B208		B209		
D18	P50		G003				D36	24	B210		B211		



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
D37	24	B212		B213			D55	30	B616	B617	B618	B619	
D38	24	B214					D56	30	B620	B621	B622	B623	
D39	21	B215		B216			D57	30	B624	B625	B626	B627	
D40	22	B000		B100			D58	30	B628	B629	B630	B631	
D41	22	B001		B101			D59	30	B632	B633	B634	B635	
D42	12		B002				D60	30	B636	B637	B638	B639	
D43	22	B003		B103			D61	30	B640	B641	B642	B643	
D44	21	B042		B052			D62	30	B644	B645	B646	B647	
D45	21	B043		B143			D63	30	B648	B649	B650	B651	
D46	21	B006		B106			D64	30	B652	B653	B654	B655	
D47	21	B007		B107			D65	30	B656	B657	B658	B659	
D48							D66	30	B660	B661	B662	B663	
D49							D67	30	B664	B665	B666	B667	
D50	50						D68	30	B668	B669	B670	B671	
D51	30	B600	B601	B602	B603		D69	30	B672	B673	B674	B675	
D52	30	B604	B605	B606	B607		D70	30	B676	B677	B678	B679	
D53	30	B608	B609	B610	B611		D71	30	B680	B681	B682	B683	
D54	30	B612	B613	B614	B615		D72	30	B684	B685	B686	B687	



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
D73	30	B688	B689	B690	B691								
D74	30	B692	B693	B694	B695								
D75	30	B696	B697	B698	B699								
D76	30	B700	B701	B702	B703								
D77	30	B704	B705	B706	B707								
D78	30	B708	B709	B710	B711								
D79	30	B712	B713	B714	B715								
D80	30	B716	B717	B718	B719								
D81	30	B720	B721	B722	B723								
D82	30	B724	B725	B726	B727								
D83	30	B728	B729	B730	B731								
D84	30	B732	B733	B734	B735								
D85	30	B736	B737	B738	B739								
D86	30	B740	B741	B742	B743								
D87	30	B744	B745	B746	B747								
D88	30	B748	B749	B750	B751								
D89	30	B752	B753	B754	B755								
D90	30	B756	B757	B758	B759								



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
E01	21	N070		N071			E19	11		B010			
E02	21	N072		N073			E20	11		B011			
E03	21	N074		N075			E21	22	B020		B120		
E04	21	N076		C035			E22	22	B021		B121		
E05	E07						E23	22	B022		B122		
E06	21	E100		E101			E24	12		B023			
E07	21	E110		E111			E25	12		B123			
E08	21	E120		E121			E26	22	B024		B124		
E09	11		N079				E27	22	B025		B125		
E10	P50		G037				E28	21	B030		B130		
E11	P50		G038				E29	21	B031		B131		
E12	P50		G039				E30	12		B032			
E13	P50		G040				E31	12		B132			
E14	P50		G041				E32	21	B033		B133		
E15	21	N082		N042			E33	21	B034		B134		
E16	21	E005		A196			E34	21	B035		B135		
E17	31	S522		S523			E35						
E18	31	S524		S525			E36						



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
E37	12		B091				E55	13		A476			
E38	12		B092				E56	15		A477			
E39	12		B093				E57	21	K505		C503		
E40	12		B094				E58	23	A462		A463		
E41	12		B095				E59	23	A464		A465		
E42							E60	11		A404			
E43							E61	11		A405			
E44							E62	11		A414			
E45							E63	11		A415			
E46							E64	21	S544		K302		
E47	21	B090		B190			E65	11		A424			
E48	12		N041				E66	11		A425			
E49	23	N040	A770				E67	21	A434		A435		
E50	73A						E68	21	A444		A445		
E51	13		A470				E69	21	A454		A455		
E52	12		A472				E70	23	A466		A467		
E53	12		A473				E71	23	A468		A469		
E54	12		A474				E72	13		A481			



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
E73	13		A482										
E74	13		A483										
E75	13		A484										
E76	13		A485										
E77	13		A486										
E78	13		A487										
E79	13		A488										
E80	13		A489										
E81	13		A490										
E82	13		A491										
E83	13		A492										
E84	13		A493										
E85	13		A494										
E86	13		A495										
E87	13		A496										
E88	13		A497										
E89	13		A498										
E90	13		A499										



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
F01	21	A292		A293			F19	31	A350		A351		
F02	31	A200		A201			F20	31	A360		A361		
F03	31	A210		A211			F21	31	A370		A371		
F04	31	A220		A221			F22	31	A380		A381		
F05	31	A230		A231			F23	31	A390		A391		
F06	31	A240		A241			F24	21	A394		A395		
F07	31	A250		A251			F25	31	K512		K513		
F08	31	A260		A261			F26	21	C500		C501		
F09	31	A270		A271			F27	31	K500		K501		
F10	31	A280		A281			F28	31	K502		K503		
F11	31	A290		A291			F29	32	A500		A501		
F12	21	A294		A295			F30	31	A502		A503		
F13	21	A392		A393			F31	32	A510		A511		
F14	31	A300		A301			F32	31	A512		A513		
F15	31	A310		A311			F33	32	A520		A521		
F16	31	A320		A321			F34	31	A522		A523		
F17	31	A330		A331			F35	31	A530		A531		
F18	31	A340		A341			F36	31	A540		A541		



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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
F37	13		A550				F55	61	M612	M613	M614		
F38	12		A551				F56	61	M615	M616	M617		
F39	21	A504		A505			F57	61	M618	M619	M620		
F40	21	A514		A515			F58	61	M621	M622	M623		
F41	21	A524		A525			F59	61	M624	M625	M626		
F42	23	A560		A561			F60	61	M627	M628	M629		
F43	23	A562		A563			F61	11		B802			
F44	23	A564		A565			F62	11		B803			
F45	23	A566		A567			F63	11		B804			
F46	21	A532		A533			F64	11		B805			
F47	22	A552		A570			F65	11		B806			
F48	24	A553		A554			F66	11		B807			
F49	24	A555		A556			F67	11		B808			
F50	23	S535		K220			F68	11		B809			
F51	61	M600	M601	M602			F69	11		B810			
F52	61	M603	M604	M605			F70	11		B811			
F53	61	M606	M607	M608			F71	60	L503	L505	L506		
F54	61	M609	M610	M611			F72	22	S530		S528		



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CHASSIS: 3446-A Card Punch Controller

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REV.

LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
F73	32	S506		S507									
F74	32	S518		S519									
F75	32	S504		S505									
F76	31	S526		S527									
F77	21	S521		S534									
F78	87	M506	M507										
F79	21	S516		S517									
F80	22	S514		S533									
F81	21	S513		S515									
F82	21	S511		S512									
F83	21	S508		S509									
F84	32	S502		S503									
F85	32	S500		S501									
F86	21	S537		S538									
F87	21	S520		S529									
F88	87	M503	M504	M505									
F89	62	L511	L501	L502									
F90	61	M508	M501	M502									



CONTROL DATA CORPORATION

COMPUTER DIVISION

CARD PLACEMENT

CHASSIS: 3446-A Card Punch Controller

REV.

DOCUMENT NO.
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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
G01	33	K202		K203			G19	32	A120		A121		
G02	33	K204		K205			G20	32	A130		A131		
G03	33	K206		K207			G21	32	A140		A141		
G04	33	K208		K209			G22	32	A150		A151		
G05	32	K214		K215			G23	32	A160		A161		
G06	21	J035		J135			G24	32	A170		A171		
G07	13		J075				G25	32	A180		A181		
G08							G26	11		A191			
G09	13		J077				G27	21	A192		A199		
G10							G28	11		A193			
G11	11		K212				G29	31	A102		A103		
G12	11		K213				G30	31	A112		A113		
G13	32	K216		K217			G31	31	A122		A123		
G14	22	J200		C503			G32	31	A132		A133		
G15	21	S531		S532			G33	31	A142		A143		
G16	11		A190				G34	31	A152		A153		
G17	32	A100		A101			G35	31	A162		A163		
G18	32	A110		A111			G36	31	A172		A173		



CONTROL DATA
CORPORATION

COMPUTER DIVISION

CARD PLACEMENT

CHASSIS: 3446-A Card Punch Controller

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SHEET 17 OF 27

REV.

LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
G37	31	A182		A183			G55	61	M663	M664	M665		
G38	31	A188		A189			G56	61	M666	M667	M668		
G39	21	A194		A195			G57	61	M669	M670	M671		
G40	13		A184				G58	61	M672	M673	M674		
G41	16		A185				G59	61	M675	M676	M677		
G42	16		A186				G60	87	M678	M679			
G43	22	A197		A198			G61	21	B800		B801		
G44	61	M630	M631	M632			G62	73A					
G45	61	M633	M634	M635			G63	73A					
G46	61	M636	M637	M638			G64	62	L001	L002	L003		
G47	61	M639	M640	M641			G65	62	L004	L005	L006		
G48	61	M642	M643	M644			G66	62	L007	L008	L009		
G49	61	M645	M646	M647			G67	62	L010	L011	L012		
G50	61	M648	M649	M650			G68	62	L013	L014	L015		
G51	61	M651	M652	M653			G69	62	L016	L017	L018		
G52	61	M654	M655	M656			G70	62	L019	L020	L021		
G53	61	M657	M658	M659			G71	62	L022	L023	L024		
G54	61	M660	M661	M662			G72	62	L025	L026	L027		



CONTROL DATA
CORPORATION

COMPUTER DIVISION

CARD PLACEMENT

CHASSIS: 3446-A Card Punch Controller

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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
G73	62	L028	L029	L030									
G74	62	L031	L032	L033									
G75	62	L034	L035	L036									
G76	62	L037	L038	L039									
G77	62	L040	L041	L042									
G78	62	L043	L044	L045									
G79	62	L046	L047	L048									
G80	62	L049	L050	L051									
G81	62	L052	L053	L054									
G82	62	L055	L056	L057									
G83	62	L058	L059	L060									
G84	62	L061	L062	L063									
G85	62	L064	L065	L066									
G86	62	L067	L068	L069									
G87	62	L070	L071	L072									
G88	62	L073	L074	L075									
G89	62	L076	L077	L078									
G90	62	L079	L080	L509									



CONTROL DATA
CORPORATION

COMPUTER DIVISION

CARD PLACEMENT

CHASSIS: 3446-A Card Punch Controller

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REV.
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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
H01	P16*	R000		R001			H19	21	J024		J025		
H02	P16*	R002		R003			H20	21	J028		J029		
H03	P16*	R004		R005			H21	21	J030		J031		
H04	P16*	R006		R007			H22	22	J050		J051		
H05	P16*	R008		R009			H23	22	J052		J053		
H06	P16*	R010		R011			H24	22	J054		J055		
H07	P16*	R012		R013			H25	22	J056		J057		
H08	P16*	R014		R015			H26	29	J058	J059	J060		
H09	P16*	R017		R019			H27	29	J061	J065	J066		
H10	21	J000		J001			H28	22	J063		J064		
H11	21	J002		J003			H29	22	J067		J016		
H12	21	J004		J005			H30	33	J070		J071		
H13	21	J006		J007			H31	21	J013		J014		
H14	21	J008		J009			H32	21	J015		J017		
H15	21	J010		J011			H33	21	J018		J032		
H16	21	J012		J068			H34	21	J033		K026		
H17	21	J020		J021			H35	13		J080			
H18	21	J022		J023			H36	33	K002		K003		

FORM 582A

* PJB cards in 3446-A/B with FV465-A is installed, and in 3446-C.



COMPUTER DIVISION

CARD PLACEMENT

CHASSIS: 3446-A Card Punch Controller

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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
H37	31	K004		K005			H55	21	K021		K023		
H38	31	K006		K007			H56	13		J074			
H39	31	K008		K009			H57	21	J076		J078		
H40	33	K030		K031			H58	31	A750		A751		
H41	97	Y000		Y001			H59	31	A754		A755		
H42	97	Y002		Y003			H60	22	A752		A753		
H43	21	K019		K022			H61	31	A760		A761		
H44	21	K020		K025			H62	31	A762		A763		
H45	12		J082				H63	22	A740		A764		
H46	13		J084				H64	85A	P001	P002	P003		
H47	23	J083		J086			H65						
H48	22	J085		S536			H66	85A	P004	P005	P006		
H49	23	J072		J073			H67						
H50	32	K300		K301			H68	85A	P007	P008	P009		
H51	32	K010		K011			H69						
H52	33	K012		K013			H70	85A	P010	P011	P012		
H53	33	K014		K015			H71						
H54	32	K016		K017			H72	85A	P013	P014	P015		



CONTROL DATA
CORPORATION

COMPUTER DIVISION

CARD PLACEMENT

CHASSIS: 3446-A Card Punch Controller

DOCUMENT NO.
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REV.

LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
H73													
H74	85A	P016	P017	P018									
H75													
H76	85A	P019	P020	P021									
H77													
H78	85A	P022	P023	P024									
H79													
H80	85A	P025	P026	P027									
H81													
H82	85A	P028	P029	P030									
H83													
H84	85A	P031	P032	P033									
H85													
H86	85A	P034	P035	P036									
H87													
H88	85A	P037	P038	P039									
H89													
H90	85A	P040	P041	P042									



CONTROL DATA CORPORATION

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CHASSIS: 3446-A Card Punch Controller

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SHEET 22 OF 27

REV.

LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
I01							I19						
I02							I20						
I03							I21						
I04							I22						
I05							I23						
I06							I24						
I07							I25						
I08							I26						
I09							I27						
I10							I28						
I11							I29						
I12							I30						
I13							I31						
I14							I32						
I15							I33						
I16							I34						
I17							I35						
I18							I36						



CONTROL DATA

CORPORATION

COMPUTER DIVISION

CARD PLACEMENT

CHASSIS: 3446-A Card Punch Controller

DOCUMENT NO.

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CP

SHEET 23 OF 27

REV.

LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
I37							I55						
I38							I56						
I39							I57						
I40							I58	21	A765		A766		
I41							I59	33	A700		A701		
I42							I60	24	A702		A703		
I43							I61	24	A704		A705		
I44							I62	24	A706		A707		
I45							I63	97	Y005		Y105		
I46							I64	21	J034		J134		
I47							I65	32	A768		A769		
I48	22	J185					I66	85A	P043	P044	P045		
I49							I67						
I50							I68	85A	P046	P047	P048		
I51							I69						
I52							I70	85A	P049	P050	P051		
I53							I71						
I54							I72	85A	P052	P053	P054		



CONTROL DATA CORPORATION

COMPUTER DIVISION

CHASSIS: 3446-A Card Punch Controller

CARD PLACEMENT

REV.

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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
I73													
I74	85A	P055	P056	P057									
I75													
I76	85A	P058	P059	P060									
I77													
I78	85A	P061	P062	P063									
I79													
I80	85A	P064	P065	P066									
I81													
I82	85A	P067	P068	P069									
I83													
I84	85A	P070	P071	P072									
I85													
I86	85A	P073	P074	P075									
I87													
I88	85A	P076	P077	P078									
I89													
I90	85A	P079	P080	P081									



CONTROL DATA
CORPORATION

COMPUTER DIVISION

CARD PLACEMENT

CHASSIS: 3446-A Card Punch Controller

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CP

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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
J01							J19	73A					
J02							J20	73A					
J03							J21	21	S539		S540		
J04							J22	82					
J05	28	K306	K350	K351			J23	22	K228		J700		
J06	P14*	T013		T014			J24	P14*	T022		T023		
J07	P14*	T015		T017			J25	P14*	T024		T025		
J08	P14*	T018		T019			J26						
J09	P14*	T020		T021			J27						
J10							J28	21	K027		K127		
J11							J29	21	K221		N083		
J12							J30	62	L510				
J13							J31	32	E000		E001		
J14	21	S541		J079			J32	31	E002		E003		
J15							J33	32	E010		E011		
J16	62	L507	L508	L504			J34	31	E012		E013		
J17	244141						J35	32	E020		E021		
J18	73A						J36	31	E022		E023		



CONTROL DATA
CORPORATION

COMPUTER DIVISION

CARD PLACEMENT

CHASSIS: 3446-A Card Punch Controller

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LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
J37	32	E030		E031			J55						
J38	31	E032		E033			J56						
J39	11		N080				J57						
J40	12		N081				J58	11		J701			
J41	P16*	R020		R120			J59	22	K218		K219		
J42	21	J036		J136			J60	33	K222		K223		
J43	33	K304		K305			J61	33	K224		K225		
J44	21	J040		J041			J62	33	K226		K227		
J45	21	J042		J043			J63	01	C400		C401		
J46	23	J500		J501			J64	21	C450		C451		
J47	23	J502		J503			J65	31	K510		K511		
J48	23	J504		J505			J66	21	K024				
J49	13		J510				J67	31	S546		S547		
J50	13		J520				J68	21	S545		S548		
J51							J69	22	J090				
J52							J70	21	J511		J512		
J53							J71	21	J521		J522		
J54							J74	23	J087				

Rev. V

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FORM 502A

* PJB card in 3446-A/B with FV465-A is installed, and in 3446-C.



CONTROL DATA CORPORATION

CARD PLACEMENT

CHASSIS: 3446-A Card Punch Controller

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COMPUTER DIVISION

LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.	LOCATION	LOGIC CARD TYPE	A	B	C	D	FIND NO.
J75	22	J088		J089									
J77	21	J091											
J78	P16*	R021											
J79	50												
J80	22	N084		N085									
J81	29	S549	S552	K233									
J82	31	S550		S551									
J83	32	K230		K231									
J84	97	Y518											
J85	29	J019		N043									
J86	21	K032											
J87	29	K033	S553	A771									
J88	11	N044											

FORM 502A

* PJB card in 3446-A/B with FV465-A is installed, and in 3446-C.



PART 5

EQUATION SUMMARY



A040=A041+S515 S503 S5-1+S550 S552 S5-3

B89A-32 A041 A043 A760

A041=A040+A461 A467 A499 A473+Y999

B89C-31 A040 A042 A198 A474 A631

A042=A043+A041 C500 K500

B90A-31 A043 A470 A471

A043=A042+A040 Y413

B90C-31 A042 A474 A760

A100=A101+A102 A190+Y999

G17A-32 A101 A103 A703

A101=A100+A103 A190+A196

G17C-32 A100 A102 A200 A703

A102=A103+A101 A193

G29A-31 A103 A100 A184 A185

A103=A102+A100 A193

G29C-31 A102 A101 A110 A111 A120 A121

A110=A111+A103 A112 A190+Y999

G18A-32 A111 A113 A703

A111=A110+A103 A113 A190+A196

G18C-32 A110 A112 A210 A703

A112=A113+A111 A193

G30A-31 A113 A110 A184 A185

A113=A112+A110 A193

G30C-31 A112 A111 A120 A121

A120=A121+A103 A113 A122 A190+Y999

G19A-32 A121 A123 A704

A121=A120+A103 A113 A123 A190+A196

G19C-32 A120 A122 A220 A704

A122=A123+A121 A193

G31A-31 A123 A120 A184 A185

A123=A122+A120 A193

G31C-31 A122 A121

A130=A131+A132 A184 A190+Y999

G20A-32 A130 A133 A704

A131=A130+A133 A184 A190+A196

G20C-32 A131 A132 A230 A704

A132=A133+A131 A193

G32A-31 A133 A130 A185 A186

A133=A132+A130 A193

G32C-31 A132 A131 A140 A141 A150 A151

A140=A141+A133 A142 A184 A191+Y999

G21A-32 A141 A143 A705

A141=A140+A133 A143 A184 A191+A196

G21C-32 A140 A142 A240 A705

A142=A143+A141 A194

G33A-31 A143 A140 A185 A186

A143=A142+A140 A194

G33C-31 A142 A141 A150 A151

A150=A151+A133 A143 A152 A184 A191+Y999

G22A-32 A151 A153 A705

A151=A150+A133 A143 A153 A184 A191+A199

G22C-32 A150 A152 A250 A705

A152=A153+A151 A194

G34A-31 A153 A150 A185 A186

A153=A152+A150 A194

G34C-31 A152 A151

A160=A161+A162 A185 A191+Y999

G23A-32 A161 A163 A706

A161=A160+A163 A185 A191+A199

G23C-32 A160 A162 A260 A706

A162=A163+A161 A194

G35A-31 A163 A160 A186

A163=A162+A160 A195

G35C-31 A162 A161 A170 A171 A180 A181

A170=A171+A163 A172 A185 A191+Y999

G24A-32 A171 A173 A706

A171=A170+A163 A173 A185 A191+A199

G24C-32 A170 A172 A270 A706

A172=A173+A171 A195

G36A-31 A173 A170 A186A

A173=A172+A170 A195

G36C-31 A172 A171 A180 A181

A180=A181+A163 A173 A185 A182 A192+Y999

G25A-32 A181 A183 A707

A181=A180+A163 A173 A183 A185 A192+A199

G25C-32 A180 A182 A280 A707

A182=A183+A181 A195

G37A-31 A183 A180 A186

A183=A182+A180 A195

G37C-31 A182 A181

A184=A102+A112+A122

G40B-13 A130 A131 A140 A141 A150 A151 A188

A185=A102+A112+A122+A132+A142+A152

G41B-16 A160 A161 A170 A171 A180 A181

A186=A132+A142+A152+A162+A172+A182

G42B-16 A188

A188=A189+A184 A186 A192

G38A-31 A189 A707

A189=A188+A199

G38C-31 A188 A290 A707

A190=A197

G16B-11 A100 A101 A110 A111 A120 A121 A130 A131

A191=A197

G26B-11 A140 A141 A150 A151 A160 A161 A170 A171

A192=A197

G27A-21 A180 A181 A188

A193=A198

G28B-11 A102 A103 A112 A113 A122 A123 A132 A133

A194=A198

G39A-21 A142 A143 A152 A153 A162

A195=A198

G39C-21 A163 A172 A173 A182 A183

A196=A740 A753 K228

E16C-31 A101 A111 A121 A131 A141

A197=A556+A631

G43A-22 A190 A191 A192

A198=C501 K505 A041+C503 K505 A541

G43C-22 A193 A194 A195

A199=A740 A753 K228

G27C-21 A151 A161 A171 A181 A189

A200=A201+A101 A292

F02A-31 A201

A201=A200+A294

F02C-31 A200 A300

A210=A211+A111 A292

F03A-31 A211

A211=A210+A294

F03C-31 A210 A310

A220=A221+A121 A292

F04A-31 A221

A221=A220+A294

F04C-31 A220 A320

A230=A231+A131 A292

F05A-31 A231

A231=A230+A294

F05C-31 A230 A330

A240=A241+A141 A292

F06A-31 A241

A241=A240+A294

F06C-31 A240 A340

A250=A251+A151 A293
F07A-31 A251
A251=A250+A295
F07C-31 A250 A350
A260=A261+A161 A293
F08A-31 A261
A261=A260+A295
F08C-31 A260 A360
A270=A271+A171 A293
F09A-31 A271
A271=A270+A295
F09C-31 A270 A370
A280=A281+A181 A293
F10A-31 A281
A281=A280+A295
F10C-31 A280 A380
A290=A291+A189 A293
F11A-31 A291
A291=A290+A295
F11C-31 A290 A390
A292=A750
F01A-21 A200 A210 A220 A230 A240
A293=A751
F01C-21 A250 A260 A270 A280 A290
A294=A740 K228 S548
F12A-21 A201 A211 A221 A231 A241

A295=A740 K228 S548

F12C-21 A251 A261 A271 A281 A291

A300=A301+A201 A392

F14A-31 A301 A703

A301=A300+A394

F14C-31 A300 A703

A310=A311+A211 A392

F15A-31 A311 A703

A311=A310+A394

F15C-31 A310 A703

A320=A321+A221 A392

F16A-31 A321 A704

A321=A320+A394

F16C-31 A320 A704

A330=A331+A231 A392

F17A-31 A331 A704

A331=A330+A394

F17C-31 A330 A704

A340=A341+A241 A392

F18A-31 A341 A705

A341=A340+A394

F18C-31 A340 A705

A350=A351+A251 A393

F19A-31 A351 A705

A351=A350+A395

F19C-31 A350 A705

A360=A361+A261 A393
F20A-31 A361 A706
A361=A360+A395
F20C-31 A360 A706
A370=A371+A271 A393
F21A-31 A371 A706
A371=A370+A395
F21C-31 A370 A706
A380=A381+A281 A393
F22A-31 A381 A707
A381=A380+A395
F22C-31 A380 A707
A390=A391+A291 A393
F23A-31 A391 A707
A391=A390+A395
F23C-31 A390 A707
A392=A766
F13A-21 A300 A310 A320 A330 A340
A393=A766
F13C-21 A350 A360 A370 A380 A390
A394=A765
F24A-21 A301 A311 A321 A331 A341
A395=A765
F24C-21 A351 A361 A371 A381 A391
A400=A401+A402 A470+Y999
C77A-32 A401 A403 A405

A401=A400+A403 A470+A474

C77C-32 A400 A402 A404 A482 A488

A402=A403+A401 A472

C78A-31 A403 A400 A476 A477

A403=A402+A400 A472

C78C-31 A402 A401 A410 A411 A420 A421

A404=A401

E68B-11 A462 A464 A466 A468 A481 A483 A485 A487

A405=A400

E61B-11 A463 A465 A467 A469 A484 A486

A410=A411+A403 A412 A470+Y999

C79A-32 A411 A413 A415

A411=A410+A403 A413 A470+A474

C79C-32 A410 A412 A414 A481 A488

A412=A413+A411 A472

C80A-31 A413 A410 A476 A477

A413=A412+A410+A472

C80C-32 A412 A411 A420 A421

A414=A411

E62B-11 A463 A464 A467 A468 A482 A483 A486 A487

A415=A410

E63B-11 A462 A465 A466 A469 A484 A485

A420=A421+A403 A413 A422 A470+Y999

C81A-32 A421 A423 A425

A421=A470+A403 A413 A423 A470 A474

C81C-32 A420 A422 A424 A481 A488

A422=A423+A421 A472

C82A-31 A423 A420 A476 A477

A423=A422+A420 A472

C82C-31 A422 A421

A424=A421

E65B-11 A465 A466 A467 A468 A484 A485 A486 A487

A425=A420

E66B-11 A462 A463 A464 A469 A482 A483

A430=A431+A432 A470 A476+Y999

C83A-32 A431 A433 A435 A491

A431=A430+A433 A470 A476+A474

C83C-32 A430 A432 A434 A490 A492

A432=A433+A431 A472

C84A-31 A433 A430 A477

A433=A432+A430 A472

C84C-31 A432 A431 A440 A441

A434=A431

E67A-21 A493 A495 A497 A498

A435=A430

E67C-21 A489 A494 A496 A499

A440=A441+A433 A442 A471 A476+Y999

C85A-32 A441 A443 A445 A492

A441=A440+A433 A443 A471 A476+A474

C85C-32 A440 A442 A444 A490 A491

A442=A443+A441 A473

C86A-31 A443 A440 A477

A443=A442+A440 A473

C86C-31 A442 A441

A444=A441

E68A-21 A493 A496 A497 A499

A445=A440

E86C-21 A489 A494 A495 A498

A450=A451+A452 A471 A477+Y999

C87A-32 A451 A453 A455 A494 A495

A451=A450+A453 A471 A477 A474

C87C-32 A450 A452 A454 A490 A491

A452=A453+A451 A473

C88A-31 A453 A450

A453=A452+A450 A473

C88C-31 A452 A451 A460

A454=A451

E69A-21 A496 A497

A455=A450

E69C-21 A489 A492 A493 A498 A499

A460=A461+A453 A471 A477

C89A-31 A461 A623

A461=A460+A474

C89C-31 A460 A621 A620 A621 A622

A462=A404+A415+A425

E58A-23 A615 A617 A619

A463=A405+A414+A425

E58C-23 A615 A617 A619

A464=A404+A414+A425

E59A-23 A615 A617 A619

A465=A405+A415+A424

E59C-23 A615 A617 A619

A466=A404+A415+A424

E70A-23 A616 A618

A467=A405+A414+A424

E70C-23 A616 A618 A041

A468=A404+A414+A424

E71A-23 A616 A618

A469=A405+A415+A425

E71C-23 A616 A618

A470=C503+K503+A042

E51B-13 A400 A401 A410 A411 A420 A421 A430 A431

A471=C503+K503+A042

C90B-13 A440 A441 A450 A451 A460

A472=C503+K501

E52B-12 A402 A403 A412 A413 A422 A423 A432 A433

A473=C503+K501

E53B-12 A041 A442 A443 A452 A453

A474=A043+A041

E54B-12 A401 A411 A421 A431 A441 A451 A461

A476=A402+A412+A422

E55B-13 A430 A431 A440 A441

A477=A402+A412+A422+A432+A442

E56B-15 A450 A451 A460

A481=A404+A411+A421

E72B-13 A600 A602 A604 A606 A608 A610 A612 A614

A482=A401+A414+A425

E73B-13 A600 A602 A604 A606 A608 A610 A612 A614

A483=A404+A414+A425

E74B-13 A600 A602 A604 A606 A608 A610 A612 A614

A484=A405+A415+A424

E75B-13 A600 A602 A604 A606 A608 A610 A612 A614

A485=A404+A415+A424

E76B-13 A601 A603 A605 A607 A609 A611 A613

A486=A405+A414+A424

E77B-13 A601 A603 A605 A607 A609 A611 A613

A487=A404+A414+A424

E78B-13 A601 A603 A605 A607 A609 A611 A613

A488=A401+A411+A421

E79B-13 A601 A603 A605 A607 A609 A611 A613

A489=A435+A445+A455

E80B-13 A615 A615 A615 A615 A616 A616 A616

A490=A431+A441+A451

E81B-13 A600 A600 A600 A600 A601 A601 A601

A491=A430+A441+A451

E82B-13 A601 A602 A602 A602 A602 A603 A603 A603

A492=A431+A440+A455

E83B-13 A603 A604 A604 A604 A604 A605 A605 A605

A493=A434+A444 A455

E84B-13 A605 A606 A606 A606 A606 A607 A607 A607

A494=A435+A445+A450

E85B-13 A607 A608 A608 A608 A608 A609 A609 A609

A495=A434+A445+A450

E86B-19 A609 A610 A610 A610 A610 A611 A611 A611

A496=A435+A444+A454

E87B-19 A611 A612 A612 A612 A612 A613 A613 A613

A497=A434+A444+A454

E88B-19 A613 A614 A614 A614 A614

A498=A434+A445+A455

E89B-13 A617 A617 A617 A617 A618 A618 A618 A616

A499=A435+A444+A455

E90B-19 A619 A619 A619 A619 A619 A618

A500=A501+A502 A550+Y999

F29A-32 A501 A503 A505

A501=A500+A503 A550+A552

F29C-32 A500 A502 A504 A541

A502=A503+A501 A551

F30A-31 A503 A500 A541 A570

A503=A502+A500 A551

F30C-31 A502 A501 A510 A511 A520 A521

A504=A501

F30A-21 A561 A563 A565 A567

A505=A500

F39C-21 A560 A562 A564 A566

A510=A511+A503 A512 A550+Y999

F31A-32 A511 A513 A515

A511=A510+A503 A513 A550+A552

F31C-32 A510 A512 A514

A512=A513+A511 A551

F32A-31 A513 A510 A541 A570

A513=A512+A510 A551

F32C-31 A512 A511 A520 A521

A514=A511

F40A-21 A562 A563 A566 A567

A515=A510

F40C-21 A560 A561 A564 A565

A520=A521+A503 A513 A522 A550+Y999

F33A-32 A521 A523 A525

A521=A520+A503 A513 A523 A550+A552

F33C-32 A520 A522 A524

A522=A523+A521 A551

F34A-31 A523 A520

A523=A522+A520 A551

F34C-31 A522 A521 A530 A541

A524=A521

F41A-21 A564 A565 A566 A567

A525=A520

F41C-21 A560 A561 A562 A563

A530=A531+A523 A550 A570

F35A-31 A531 A553 A553 A553 A553 A533

A531=A530+A552

F35C-31 A530 A541 A554 A555 A555 A532

A532=A531

F46A-21 A554

A533=A530

F46C-21 A555 A555

A540=A541+K503 K301 K302

F36A-31 A541 A550 K003

A541=A540+A501 A512 A523 A531

F36C-31 A540 A198 A552 A556

A550=C501+K503+A540

F37B-19 A500 A501 A510 A511 A520 A521 A530

A551=C501+K501

F38B-12 A502 A503 A512 A513 A522 A523

A552=A541+Y999

F47A-22 A501 A511 A521 A531

A553=A561 A530 B300+A562 A530 B301+A563 A530 B302+A564 A530 B303

F48A-24 A556

A554=A565 A532 B304+A566 B305+A567 B306+A560 A531 B307

F48C-24 A556

A555=A561 A531 B308+A562 A531 B309+A563 A533 B310+A564 A533 B311

F49A-24 A556

A556=C500+K505+A553 A554 A555+A540

F49C-24 A197

A560=A505+A515+A525

F42A-23 A554

A561=A504+A515+A525

F42C-23 A553 A555

A562=A505+A514+A525

F43A-23 A553 A555

A563=A504+A514+A525

F43C-23 A553 A555

A564=A505+A515+A524

F44A-23 A553 A555

A565=A504+A515+A524

F44C-23 A554

A566=A505+A514+A524

F45A-23 A554

A567=A504+A514+A524

F45C-23 A554

A570=A502+A512

F47C-22 A530

A600=A481 A490 B601+A482 A490 B603+A483 A490 B605+A484 A490 B607

B76A-24 A620

A601=A485 A490 B609+A486 A490 B611+A487 A490 B613+A488 A491 B615

B76C-24 A620

A602=A481 A491 B617+A482 A491 B619+A483 A491 B621+A484 A491 B623

B77A-24 A620

A603=A485 A491 B625+A486 A491 B627+A487 A491 B629+A488 A492 B631

B77C-24 A620

A604=A481 A492 B633+A482 A492 B635+A483 A492 B637+A484 A492 B639

B78A-24 A620

A605=A485 A492 B641+A486 A492 B643+A487 A492 B645+A488 A493 B647

B78C-24 A621

A606=A481 A493 B649+A482 A493 B651+A483 A493 B653+A484 A493 B655
B79A-24 A621

A607=A485 A493 B657+A486 A493 B659+A487 A493 B661+A488 A494 B663
B79C-24 A621

A608=A481 A494 B665+A482 A494 B667+A483 A494 B669+A484 A494 B671
B80A-24 A621

A609=A485 A494 B673+A486 A494 B675+A487 A494 B677+A488 A495 B679
B80C-24 A621

A610=A481 A495 B681+A482 A495 B683+A483 A495 B685+A484 A495 B687
B81A-24 A622

A611=A485 A495 B689+A486 A495 B691+A487 A495 B693+A488 A496 B695
B81C-24 A622

A612=A481 A496 B697+A482 A496 B699+A483 A496 B701+A484 A496 B703
B82A-24 A622

A613=A485 A496 B705+A486 A496 B707+A487 A496 B709+A488 A497 B711
B82C-24 A622

A614=A481 A497 B713+A482 A497 B715+A483 A497 B717+A484 A497 B719
B86A-24 A622

A615=A462 A489 B721+A463 A489 B723+A464 A489 B725+A465 A489 B727
B86C-24 A623

A616=A466 A489 B729+A467 A489 B731+A468 A489 B733+A469 A498 B735
B87A-24 A623

A617=A462 A498 B737+A463 A498 B739+A464 A498 B741+A465 A498 B743
B87C-24=A623

A618=A466 A498 B745+A467 A498 B747+A468 A498 B749+A469 A489 B751
B88A-24 A623

A619=A462 A499 B753+A463 A499 B755+A464 A499 B757+A465 A499 B759

B88C-24 A623

A620=A461+A600 A601 A602 A603 A604

B83A-22 A630

A621=A461+A605 A606 A607 A608 A609

B83C-22 A630

A622=A461+A610 A611 A612 A613 A614

B84A-22 A630

A623=A460+A615 A616 A617 A618 A619

B84C-22 A630

A630=A620+A621+A622+A623

B85A-24 A631

A631=A630+C500+K501+A040

B85C-24 A197

A700=A701+A702+Y999+Y999

I59A-33 A701 J200 A767

A701=A700+K013 J033 S541+A771+Y999

I59C-33 A700 T024

A702=A760+A763+A703 A704 A705 A706 A707+Y999

I60A-24 A700

A703=A100 A301+A101 A300+A110 A311+A111 A310

I60C-24 A702

A704=A120 A321+A121 A320+A130 A331+A131 A330

I61A-24 A702

A705=A140 A341+A141 A340+A150 A351+A151 A350

I61C-24 A702

A706=A160 A361+A161 A360+A170 A371+A171 A370

I62A-24 A702

A707=A180 A381+A181 A380+A188 A391+A189 A390

I62C-24 A702

A740=Y999+K003 K004 R015 A768

H63A-22 A196 A199 A294 A295

A750=A751+S519 S530

H58A-31 A751 A755 A292 A293

A751=A750+A755

H58C-31 A750 A754

A752=A754 Y406+A755

H60A-22 A753

A753=A752+A764

H60C-22 A196 A199

A754=A755+A751 Y408

H59A-31 A755 A752

A755=A754+A750 Y409

H59C-31 A754 A750 A752

A760=A761+E031 E021 A040 A043

H61A-31 A761 A702 A763 A764 A766

A761=A760+A763 Y411

H61C-31 A760 A762 A764

A762=A763+A761 Y410

H62-31 A763

A763=A762+A760 Y412

H62C-31 A762 A702 A761 A766

A764=A760 Y407+A761

H63C-22 A753 A765

A765=A764

I58A-21 A394 A395

A766=A760 A763

I58C-21 A392 A393

A767=A700+Y999

A768=A769+J034 J082+Y999

I65A-32 A769 K306 A740

A769=A768+S539+N041

I65C-32 A768

A770=N042+M504 S540+Y999

E49B-23 A771

A771=A770

J87C-29 A701

A770=N041+M504 S540+Y999

E49B-23 A771

A771=A770

J87C-29 A701

B000=B020+B021

D40A-22 B201 B206 B211

B001=B030+B021

D41A-22 B200 B205 B210

B002=B020+B031

D42B-12 B204 B208 B208 B209 B212

B003=B030+B031

D43A-22 B203 B207 B201

B006=B030 B031 B032 B033

D46A-21 B211

B007=B034 B035

D47A-21 B212

B010=K031

E19B-11 B020 B021 B022 B023 B024 B025 B032

B011=K030

E20B-11 B020 B021 B022 B023 B024 B025 B032

B020=J000 B010+J006 B011

E21A-22 B000 B002 B030

B021=J001 B010+J007 B011

E22A-22 B000 B001 B031

B022=J002 B010+J008 B011

E23A-22 B203 B204 B205 B052

B023=J003 B010+J009 B011

E24B-12 B033 B200 B201 B201 B208 B208 B212

B024=J004 B010+J010 B011

E26A-22 B034 B208 B211 B214

B025=J005 B010+J011 B011

E27A-22 B035 B208 B211 B213

B030=B020

E28A-21 B001 B003 B006

B031=B021

E29A-21 B002 B003 B006

B032=B002 B010+R008 B011

E30B-12 B006 B200 B201 B207 B211 B212 B210

B033=B023

E32A-21 B006 B211 B210 B209 B043

B034=B024

E33A-21 B007 B208 B211 B213

B035=B025

E34A-21 B007 B208 B211 B214

B042=B052

D44A-21 B206 B201

B043=B033

D45A-21 B201

B052=B022

D44C-21 B042 B208 B208 B209 B201

B090=J032 K005

E47A-21 B091 B092 B093 B094 B095

B091=B090+K212

E37B-12 B200 B201 B203 B204 B205 B206

B092=B090+K212

E38B-12 B207 B209 B210 B212 B213 B214

B093=B090+K213

E39B-12 B200 B201 B201 B203 B204 B205 B206 B201

B094=B090 K213

E40B-12 B207 B208 B208 B209 B210 B211 B211

B095=B090+K213

E41B-12 B212 B213 B214

B200=B001 B023 B032 B093+B091 J020+Y999+Y999

D31A-24 B300 G000

B201=B000 B023 B032 B093+B091 J021+B028 B093 B042+B093 B003 B052 B043

D32A-24 B301 G001

B202=Y999+Y999+Y999+Y999

D32C-24 B301 G001

B203=B003 B022 B093+B091 J022+Y999+Y999

D31C-24 B302 G002

B204=B002 B022 B093+B091 J023+Y999+Y999

D33A-24 B303 G003

B205=B001 B022 B093+B091 R004+Y999+Y999

D33C-24 B304 G004

B206=B000 B042 B093+B091 R005+Y999+Y999

D34A-24 B305 G005

B207=B003 B032 B094+B092 R006+Y999+Y999

D34C-24 B306 G006

B208=B002 B023 B034 B035 B094 B052+B002 B023 B024 B025 B094 B052+Y999+Y999

D35A-24 B301 B215

B209=B002 B052 B033 B094+B092 R007+Y999+Y999

D35C-24 B307 G007

B210=B001 B032 B033 B094+B092 R008+Y999+Y999

D36A-24 B308 G008

B211=B000 B032 B034 B035 B094 B033+B006 B024 B025 B094+Y999+Y999

D36C-24 B309 G009

B212=B002 B007 B023 B095 B032+B092 R009+Y999+Y999

D37A-24 B309 G009

B213=B025 B034 B095+B092 R010+Y999+Y999

D37C-24 B310 G010

B214=B024 B035 B095+B092 R011+Y999+Y999

D38A-24 B311 G011

B215=B208

D39A-21 B216

B216=B215

D39C-21 B307 G001 G007

B300=B200

D27A-29 A553

B301=B201 B202 B208

D27B-29 A553

B302=B203

D27C-29 A553

B303=B204

D28A-29 A553

B304=B205

D28B-29 A554

B305=B206

D28C-29 A554

B306=B207

D29A-29 A554

B307=B210 B209

D29B-29 A554

B308=B210

D29C-29 A555

B309=B211 B212
D30A-29 A555
B310=B213
D30B-29 A555
B311=B214
D30C-29 A555
B600=B601+M600
D51A-30 B001
B601=B600+B802
D51B-30 B600 A600
B602=B603+M601
D51C-30 B603
B603=B602+B802
D51D-30 B602 A600
B604=B605+M602
D52A-30 B605
B605=B604+B802
D52B-30 B604 A600
B606=B607+M603
D52C-30 B607
B607=B606+B802
D52D-30 B606 A600
B608=B609+M604
D53A-30 B609
B609=B608+B802
D53B-30 B608 A601

B610=B611+M605

D53C-30 B611

B611=B610+B802

D53D-30 B610 A601

B612=B613+M606

D54A-30 B613

B613=B612+B802

D54B-30 B612 A601

B614=B615+M607

D54C-30 B615

B615=B614+B802

D54D-30 B614 A601

B616=B617+M608

D55A-30 B617

B617=B616+B803

D55B-30 B616 A602

B618=B619+M609

D55C-30 B619

B619=B618+B803

D55D-30 B618 A602

B620=B621+M610

D56A-30 B621

B621=B620+B803

D56B-30 B620 A602

B622=B623+M611

D56C-30 B623

B623=B622+B803
D56D-30 B622 A602
B624=B625+M612
D57A-30 B625
B625=B624+B803
D57B-30 B624 A603
B626=B627+M613
D57C-30 B627
B627=B628+B803
D57D-30 B626 A603
B628=B629+M614
D58A-30 B629
B629=B628+B803
D58B-30 B628 A603
B630=B631+M615
D58C-30 B631
B631=B630+B803
D58D-30 B630 A603
B632=B633+M616
D59A-30 B633
B633=B632+B804
D59B-30 B632 A604
B634=B635+M617
D59C-30 B635
B635=B634+B804
D59D-30 B634 A604

B636=B637+M618

D60A-30 B637

B637=B636+B804

D60B-30 B636 A604

B638=B639+M619

D60C-30 B639

B639=B638+B804

D60D-30 B638 A604

B640=B641+M620

D61A-30 B641

B641=B640+B804

D61B-30 B640 A605

B642=B643+M621

D61C-30 B643

B643=B642+B804

D61D-30 B642 A605

B644=B645+M622

D12A-30 B645

B645=B644+B804

D62B-30 B644 A605

B646=B647+M623

D62C-30 B647

B647=B646+B804

D62D-30 B646 A605

B648=B649+M624

D63A-30 B649

B649=B648+B805
D63B-30 B648 A606
B650=B651+M625
D63C-30 B651
B651=B650+B805
D63D-30 B650 A606
B652=B653+M626
D64A-30 B653
B653=B652+B805
D64B-30 B652 A606
B654=B655+M627
D64C-30 B655
B655=B654+B805
D64D-30 B654 A606
B656=B657+M628
D65A-30 B657
B657=B656+B805
D65B-30 B656 A607
B658=B659+M629
D65C-30 B659
B659=B658+B805
D65D-30 B658 A607
B660=B661+M630
D66A-30 B661
B661=B660+B805
D66B-30 B660 A607

B662=B663+M631

D66C-30 B663

B663=B662+B805

D66D-30 B662 A607

B664=B665+M632

D67A-30 B665

B665=B664+B806

D67B-30 B664 A608

B666=B667+M633

D67C-30 B667

B667=B666+B806

D67D-30 B666 A608

B668=B669+M634

D68A-30 B669

B669=B668+B806

D68B-30 B668 A608

B670=B671+M635

D68C-30 B671

B671=B670+B806

D68D-30 B670 A608

B672=B673+M636

D69A-30 B673

B673=B672+B806

D69B-30 B672 A609

B674=B675+M637

D69C-30 B675

B675=B674+B806
D69D-30 B674 A609
B676=B677+M638
D70A-30 B677
B677=B676+B806
D70B-30 B676 A609
B678=B679+M639
D70C-30 B679
B679=B678+B806
D70D-30 B678 A609
B680=B681+M640
D71A-30 B681
B681=B680+B807
D71B-30 B680 A610
B682=B683+M641
D71C-30 B683
B683=B682+B807
D71D-30 B682 A610
B684=B685+M642
D72A-30 B685
B685=B684+B807
D72B-30 B684 A610
B686=B687+M643
D72C-30 B687
B687=B686+B807
D72D-30 B686 A610

B688=B689+M644
D73A-30 B689
B689=B688+B807
D73B-30 B688 A611
B690=B691+M645
D73C-30 B691
B691=B690+B807
D73D-30 B690 A611
B692=B693+M646
D74A-30 B693
B693=B692+B807
D74B-30 B692 A611
B694=B695+M647
D74C-30 B695
B695=B694+B807
D74D-30 B694 A611
B696=B697+M648
D75A-30 B697
B697=B696+B808
D75B-30 B696 A612
B698=B699+M649
D75C-30 B699
B699=B698+B808
D75D-30 B698 A612
B700=B701+M650
D76A-30 B701

B701=B700+B808
D76B-30 B700 A612
B702=B703+M651
D76C-30 B703
B703=B702+B808
D76D-30 B702 A612
B704=B705+M652
D77A-30 B705
B705=B704+B808
B77B-30 B704 A613
B706=B707+M653
D77C-30 B707
B707=B706+B808
D77D-30 B706 A613
B708=B709+M654
D78A-30 B709
B709=B708+B808
D78B-30 B708 A613
B710=B711+M655
D78C-30 B711
B711=B710+B808
D78D-30 B710 A613
B712=B713+M656
D79A-30 B713
B713=B712+B809
D79B-30 B712 A614

B714=B715+M657
D79C-30 B715
B715=B714+B809
D79D-30 B714 A614
B716=B717+M658
D80A-30 B717
B717=B716+B809
D80B-30 B716 A614
B718=B719+M659
D80C-30 B719
B719=B718+B809
D80D-30 B718 A614
B720=B721+M660
D81A-30 B721
B721=B720+B809
D81B-30 B720 A615
B722=B723+M661
D81C-30 B723
B723=B722+B809
D81D-30 B722 A615
B724=B725+M662
D82A-30 B725
B725=B724+B809
D82B-30 B724 A615
B726=B727+M663
D82C-30 B727

B727=B726+B809
D82D-30 B726 A615
B728=B729+M664
D83A-30 B729
B729=B728+B810
D83B-30 B728 A616
B730=B731+M665
D83C-30 B731
B731=B730+B810
D83D-30 B730 A616
B732=B733+B666
D84A-30 B733
B733=B732+B810
D84B-30 B732 A616
B734=B735+M667
D84C-30 B735
B735=B734+B810
D84D-30 B734 A616
B736=B737+M668
D85A-30 B737
B737=B736+B810
D85B-30 B736 A617
B738=B739+B669
D85C-30 B739
B739=B738+B810
D85D-30 B738 A617

B740=B741+M670
D86A-30 B741
B741=B740+B810
D86B-30 B740 A617
B742=B743+M671
D86C-30 B743
B743=B742+B810
D86D-30 B742 A617
B744=B745+M672
D87A-30 B745
B745=B744+B811
D87B-30 B744 A618
B746=B747+M673
D87C-30 B747
B747=B746+B811
D87D-30 B746 A618
B748=B749+M674
D88A-30 B749
B749=B748+B811
D88B-30 B748 A618
B750=B751+M675
D88C-30 B751
B751=B750+B811
D88D-30 B750 A618
B752=B753+M676
D89A-30 B753

B753=B752+B811
D89B-30 B752 A619
B754=B753+M677
D89C-30 B755
B755=B754+B811
D89D-30 B754 A619
B756=B757+M678
D90A-30 B757
B757=B758+B811
D90B-30 B758 A619
B758=B759+M679
D90C-30 B759
B759=B758+B811
D90D-30 B758 A619
B800=S508 S509
G61A-21 B802 B803 B804 B805 B806
B801=S508 S509
G61C-21 B807 B808 B809 B810 B811
B802=B800
F61B-11 B601 B603 B605 B607 B609 B611 B612 B615
B803=B800
F62B-11 B617 B619 B621 B623 B625 B627 B629 B631
B804=B800
F63B-11 B633 B635 B637 B639 B641 B643 B645 B647
B805=B800
F64B-11 B649 B651 B653 B655 B657 B659 B661 B663

B806=B800

F65B-11 B665 B667 B669 B671 B673 B675 B677 B679

B807=B801

F66B-11=B681 B683 B685 B687 B689 B691 B693 B695

B808=B801

F67B-11 B697 B699 B701 B703 B705 B707 B709 B711

B809=B801

F68B-11 B713 B715 B717 B719 B721 B723 B725 B727

B810=B801

F69B-11 B729 B731 B733 B735 B737 B739 B741 B743

B811=B801

F70B-11 B745 B747 B749 B751 B753 B755 B757 B759

C000=C001+C002 N055+Y999

C26A-32 C001 C003 G021 C005

C001=C000+C003 N055+N050

C26C-32 C000 C002 G020 G022 C004

C002=C003+C001 N054

C27A-31 C003 C000 N056

C003=C002+C000 N054

C27C-31 C002 C001 C010 C011 C020 C021

C004=C001

C47A-21 G023 G025 G027

C005=C000

C47C-21 G024 G026 K002

C010=C011+C012 C003 N055+Y999

C28A-32 C011 C013 G022 C015

$C011 = C010 + C013 \quad C003 \quad N055 + N050$
 $C28C-32 \quad C010 \quad C012 \quad G020 \quad G021 \quad C014$
 $C012 = C013 + C011 \quad N054$
 $G29A-31 \quad C013 \quad C010 \quad N056$
 $C013 = C012 + C010 \quad N054$
 $C29C-31 \quad C012 \quad C011 \quad C020 \quad C021$
 $C014 = G011$
 $C48A-21 \quad G023 \quad G026 \quad G027$
 $C015 = C010$
 $C48C-21 \quad G024 \quad G025$
 $C020 = C021 + C022 \quad C013 \quad C003 \quad N055 + Y999$
 $C30A-32 \quad C021 \quad C023 \quad C025 \quad G024$
 $C021 = C020 + C013 \quad C023 \quad C003 \quad N055 + N050$
 $C30C-32 \quad C020 \quad C022 \quad G020 \quad G021 \quad C024$
 $C022 = C023 + C021 \quad N054$
 $C31A-31 \quad C023 \quad C020 \quad N056$
 $C023 = C022 + C020 \quad N054$
 $C31C-31 \quad C022 \quad C021$
 $C024 = C021$
 $C49A-21 \quad G025 \quad G026 \quad G027$
 $C025 = C020$
 $C49C-21 \quad G022 \quad G023$
 $C030 = C031 + C032 \quad N056 + Y999$
 $C32A-32 \quad C031 \quad C033 \quad N070 \quad N072$
 $C031 = C030 + C035 \quad N056 + N050$
 $C32C-32 \quad C030 \quad C032 \quad N071 \quad N073$

C032=C033+C031 N053

C33A-31 C033 C030 C035

C033=C032+C030 N053

C33C-31 C032 C060

C035=C032

E04C-21 E031 C040 C041 C050 E051

C040=E041+C042 C035 N056+Y999

C34A-32 E041 C043 N070 N071

C041=C040+C043 C035 N056+N050

C34C-32 C040 C042 N072 N073 S518

C042=C043+C041 N053

C35A-31 C043 C040

C043=C042+C040 N053

C35C-31 E042 C041 C050 C051 E060

C050=C051+C052 C043 C035 N056+Y999

C36A-32 C051 C053 N074 N076

C051=C050+C053 C043 C035 N056+N050

C36C-32 C050 C052 N075

C052=C053+C051 N053

C37A-31 C053 C050

C053=C052+C050 N053

C37C-31 E053 C051 C060

C060=C061+C053 C043 C033 N056

C38A-31 C061 N074 N075

C061=C060+N050

C38C-31 C060 N076 S518

C400=

F25A-01 C500

C401=

F25C-01 C501 C503

C500=C400

F26A-21 K500 K501 A556 A631 A042

C501=C401

F26C-21 K502 K503 A550 A551 A198

C503=C401

E75C-21 A470 A471 A472 A473 A198

D020=N070+N074+N057+Y999

D01B-R52

D021=N071+N074+Y999+Y999

D02B-R52

D022=N072+N074+Y999+Y999

D03B-R52

D023=N073+N074+Y999+Y999

D04B-R52

D024=N070+N075+Y999+Y999

D05B-R52

D025=N071+N075+Y999+Y999

D06B-R52

D026=N072+N075+Y999+Y999

D07B-R52

D027=N073+N075+Y999+Y999

D08B-R52

D028=N070+N076+Y999+Y999

D09B-R52

D029=N071+N076+Y999+Y999

D10B-R52

D030=S522+S525+Y999+Y999

B23B-R52

D031=S522+S525+Y999+Y999

B24B-R52

D040=N059+Y999+Y999+Y999

B21B-R52

D041=N059+Y999+Y999+Y999

B22B-R52

E000=E001+E002 N081+Y999

J31A-32 E001 E003 E101 G041

E001=E000+E005 N081+N083

J31C-32 E000 E002 E100 G040

E002=E003+E001 N080

J32A-31 E003 E000 E005

E003=E002+E000 N080

J32C-31 E002 E030 E031

E005=E002

E10A-21 E001 E010 E011 E020 E021

E010=E011+E012 E005 N081+Y999

J33A-32 E011 E013 E111 G041

E011=E010+E013 E005 N081+N083

J33C-32 E010 E012 E110 G039

E012=E013+E011 N080

J34A-31 E013 E010

E013=E012+E010 N080

J34C-31 E012 E011 E020 E021 E030 E031

E020=E021+E022 E013 E005 N081+Y999

J35A-32 E021 E121 E023

E021=E020+E023 E013 E005 N081+N083

J35C-32 E020 A760 E120 E022 G039

E022=E023+E021 N080

J36A-31 E023 E020

E023=E022+E020 N080

J36C-31 E022 E021 E030 E031

E030=E031+E032 E013 E003 E023 N081+Y999

J37A-32 E031 N079 E033

E031=E030+E033 E013 E003 E023 N081+N083

J37C-32 E030 A760 N082 E032

E032=E033+E031 N080

J38A-31 E030 E030

E033=E032+E030 N080

J38C-31 E032 E031

E100=E001

E06A-21 G031 G033 G035 G037 G039

E101=E000

E06C-21 G030 G032 G034 G036 G038

E110=E011

E07A-21 G032 G033 G036 G037 G040

E111=E010

E07C-21 G030 G031 G034 G035 G038

E120=E021

E08A-21 G034 G035 G036 G037

E121=E020

E08C-21 G030 G031 G032 G033 G038

G000=B200+Y999+Y999+Y999

D15B-R50

G001=B201 B202 B216+Y999+Y999+Y999

D16B-R50

G002=B203+Y999+Y999+Y999

D17B-R50

G003=B204+Y999+Y999+Y999

D18B-R50

G004=B205+Y999+Y999+Y999

D19B-R50

G005=B206+Y999+Y999+Y999

D20B-R50

G006=B207+Y999+Y999+Y999

D21B-R50

G007=B210 B209+Y999+Y999+Y999

D22B-R50

G008=B210+Y999+Y999+Y999

D23B-R50

G009=B211 B212+Y999+Y999+Y999

D24B-R50

G010=B213+Y999+Y999+Y999

D25B-R50

G011=B214+Y999+Y999+Y999

D26B-R50

G020=N057+C001+C011+C021

C19B-R50

G021=N057+C000+C011+C021

C20B-R50

G022=N057+C001+C010+C025

C018-R50

G023=N057+C004+C014+C025

C028-R50

G024=N057+C005+C015+C020

C038-R50

G025=N057+C004+C015+C024

C048-R50

G026=N059+C005+C014+C024

C21B-R50

G027=N059+C004 C014+C024

C22B-R50

G030=E101+E111+E121+N079

C23B-R50

G031=E100+E111+E121+N079

C24B-R50

G032=E101+E110+E121 N079

C25B-R50

G033=E100+E110+E121+N079

D11B-R50

G034=E101+E111+E120+N079

D12B-R50

G035=E100+E111+E120+N079

D13B-R50

G036=E101+E110+E120+N079

D14B-R50

G037=E100+E110+E120+N079

E10B-R50

G038=E101+E111+E121+N082

E11B-R50

G039=E100+E011+E021+N082

E12B-R50

G040=E001+E110+N082+Y999

E13B-R50

G041=E000+E010+N082+Y999

E14B-R50

H001=M101 S001+N090

B25A-22 H101

H002=M102 S002+N090

B25C-22 H102

H003=M103 S003+N090

B26A-22 H103

H004=M104 S004+N090

B26C-22 H104

H005=M105 S005+N090

B27A-22 H105

H006=M106 S006+N090

B27C-22 H106

H007=M107 S007+N090

B28A-22 H107

H008=M108 S008+N090

B28C-22 H108

H009=M109 S009+N091

B29A-22 H109

H010=M110 S010+N091

B29C-22 H110

H011=M111 S011+N091

B20A-22 H111

H012=M112 S012+N091

B30C-22 H112

H013=M113 S013+N091

B31A-22 H113

H014=M114 S014+N091

B31C-22 H114

H015=M115 S015+N091

B32A-22 H115

H016=M116 S016+N091

B32C-22 H116

H017=M117 S017+N092

B33A-22 H117

H018=M118 S018+N092

B33C-22 H118

H019=M119 S019+N092

B34A-22 H119

H020=M120 S020+N092

B34C-22 H120

H021=M121 S021+N092

B35A-22 H121

H022=M122 S022+N092

B35C-22 H122

H023=M123 S023+N092

B36A-22 H123

H024=M124 S024+N092

B36C-22 H124

H025=M125 S025+N093

B37A-22 H125

H026=M126 S026+N093

B37C-22 H126

H027=M127 S027+N093

B38A-32 H127

H028=M128 S028+N093

B38C-22 H128

H029=M129 S029+N093

H030=M130 S030+N093

B39C-22 H130

H031=M131 S031+N093

B40A-22 H131

H032=M132 S032+N093

B40C-22 H132

H033=M133 S033+N094

B41A-22 H137

H034=M134 S034+N094

B41C-22 H134

H035=M135 S035+N094

B42A-22 H135

H036=M136 S036+N094

B42C-22 H136

H037=M137 S037+N094

B43A-22 H137

H038=M138 S038+N094

B43C-22 H138

H039=M139 S039+N094

B44A-22 H139

H040=M140 S040+N094

B44C-22 H140

H041=M141 S041+N095

B45A-22 H141

H042=M142 S042+N095

B45C-22 H142

H043=M143 S043+N095

B46A-22 H143

H044=M144 S044+N095

B46C-22 H144

H045=M145 S045+N095

B47A-22 H145

H046=M146 S046+N095

B47C-22 H146

H047=M147 S047+N095

B48A-22 H147

H048=M148 S048+N095

B48C-22 H148

H049=M149 S049+N096

B49A-22 H149

H050=M150 S050+N096

B49C-22 H150

H051=M151 S051+N096

B50A-22 H151

H052=M152 S052+N096

B50C-22 H152

H053=M153 S053+N096

B51A-22 H153

H054=M154 S054+N096

B51C-22 H154

H055=M155 S055+N096

B52A-22 H155

H056=M156 S056+N096

B52C-22 H156

H057=M157 S057+N097
B53A-22 H157
H058=M158 S058+N097
B53C-22 H158
H059=M159 S059+N097
B54A-22 H159
H060=M160 S060+N097
B54C-22 H160
H061=M161 S061+N097
B55A-22 H161
H062=M162 S062+N097
B55C-22 H162
H063=M163 S063+N097
B56A-22 H163
H064=M164 S064+N097
B56C-22 H164
H065=M165 S065+N098
B57A-22 H165
H066=M166 S066+N098
B57C-22 H166
H067=M167 S067+N098
B58A-22 H167
H068=M168 S068+N098
B58C-22 H168
H069=M169 S069+N098
B59A-22 H169

H070=M170 S070+N098

B59C-22 H170

H071=M171 S071+S098

B60A-22 H171

H072=M172 S072+S098

B60C-22 H172

H073=M173 S073+N099

B61A-22 H173

H074=M174 S074+N099

B61C-22 H174

H075=M175 S075+N099

B62A-22 H175

H076=M176 S076+N099

B62C-22 H176

H077=M177 S077+N099

B63A-22 H177

H078=M178 S078+N099

B63C-22 H178

H079=M179 S079+N099

B64A-22 H179

H080=M180 S080+N099

B64C-22 H180

H101=M001

C50A-29 M001 L001

H102=M002

C50B-29 M002 L002

Hj03=M003
C50C-29 H003 L003
Hj04=M004
C51A-29 H004 L004
Hj05=M005
C51B-29 H005 L005
Hj06=M006
C51C-29 H006 L006
Hj07=M007
C52A-29 H007 L007
Hj08=M008
C52B-29 H008 L008
Hj09=M009
C52C-29 H009 L009
Hj10=M010
C53A-29 H010 L010
Hj11=M011
C53B-29 H011 L011
Hj12=M012
C53C-29 H012 L012
Hj13=M013
C54A-29 H013 L013
Hj14=M014
C54B-29 H014 L014
Hj15=M015
C54C-29 H015 L015

Hj16=M016
C55A-29 H016 L016
Hj17=M017
C55B-29 H017 L017
Hj18=M018
C55C-29 H018 L018
Hj19=M019
C56A-29 H019 L019
Hj20=M020
C56B-29 H020 L020
Hj21=M021
C56C-29 H021 L021
Hj22=M022
C57A-29 H022 L022
Hj23=M023
C57B-29 H023 L023
Hj24=M024
C57C-29 H024 L024
Hj25=M025
C58A-29 H025 L025
Hj26=M026
C58B-29 H026 L026
Hj27=M027
C58C-29 H027 L027
Hj28=M028
C59A-29 H028 L028

H129=M029
C59B-29 M029 L029
H130=M030
C59C-29 M030 L030
H131=M031
C60A-29 M031 L031
H132=M032
C60B-29 M032 L032
H133=M033
C60C-29 M033 L033
H134=M034
C61A-29 M034 L034
H135=M035
C61B-29 M035 L035
H136=M036
C61C-29 M036 L036
H137=M037
C62A-29 M037 L037
H138=M038
C62B-29 M038 L038
H139=M039
C62C-29 M039 L039
H140=M040
C63A-29 M040 L040
H141=M041
C63B-29 M041 L041

H142=M042
C63C-29 H042 L042
H143=M043
C64A-29 H043 L043
H144=M044
C64B-29 H044 L044
H145=M045
C64C-29 H045 L045
H146=M046
C65A-29 H046 L046
H147=M047
C65B-29 H047 L047
H148=M048
C65C-29 H048 L048
H149=M049
C66A-29 H049 L049
H150=M050
C66B-29 H050 L050
H151=M051
C66C-29 H051 L051
H152=M052
C67A-29 H052 L052
H153=M053
C67B-29 H053 L053
H154=M054
C67C-29 H054 L054

H155=M055
C68A-29 M055 L055
H156=M056
C68B-29 M056 L056
H157=M057
C68C-29 M057 L057
H158=M058
C69A-29 M058 L058
H159=M059
C69B-29 M059 L059
H160=M060
C69C-29 M060 L060
H161=M061
C70A-29 M061 L061
H162=M062
C70B-29 M062 L062
H163=M063
C70C-29 M063 L063
H164=M064
C71A-29 M064 L064
H165=M065
C71B-29 M065 L065
H166=M066
C71C-29 M066 L066
H167=M067
C72A-29 M067 L067

Hj68=M068
C72B-29 H068 L068
Hj69=M069
C72C-29 H069 L069
Hj70=M070
C73A-29 H070 L070
Hj71=M071
C73B-29 H071 L071
Hj72=M072
C73C-29 H072 L072
Hj73=M073
C74A-29 H073 L073
Hj74=M074
C74B-29 H074 L074
Hj75=M075
C74C-29 H075 L075
Hj76=M076
C75A-29 H076 L076
Hj77=M077
C75B-29 H077 L077
Hj78=M078
C75C-29 H078 L078
Hj79=M079
C76A-29 H079 L079
Hj80=M080
C76B-29 H080 L080

J000=R000
H10A-21 B020 J020 J050 J051 J501
J001=R001
H10C-21 B021 J021 J050 J051 J001
J002=R002
H11A-21 B022 J022 J050 J050
J003=R003
H11C-21 B023 J023 J052 J053 J521
J004=R004
H12A-21 B024 J024 J052 J053 J520
J005=R005
H12C-21 B025 J025 J052 J052 J521
J006=R006
H13A-21 B020 J054 J055
J007=R007
H13C-21 B021 J054 J055
J008=R008
H14A-21 B022 J028 J054 J054
J009=R009
H14C-21 B023 J056 J057 J029 S04-1-2
J010=R010
H15A-21 B024 J056 J057 J030 S04-2-3
J011=R011
H15C-21 B025 J056 J056 J031 S04-3-5
J012=R012
H16A-21 J070

J013=R013
H31A-21 J016 J035 J073
J014=R014 J074
H31C-21 J016 J075 J033 J077 J090
J015=R015 Y006
H32A-21 J032 K030 J034
J016=J013 J014+Y999
H29C-22 K002
J017=R017 J074
H32C-21 S535 Y005
J018=Y005
H33A-21 S535 N050 N051 N052 N057
J019=R019
J85A-29 K033
J020=J000
H17A-21 B200 J500 J502 J504
J021=J001
H17C-21 B201 J500 J501 J504 J505
J022=J002
H18A-21 B203 J051 J500 J501 J502
J023=J003
H18C-21 B204 J510 J520
J024=J004
H19A-21 J521 J510
J025=J005
H19C-21 J510 J520

J028=J008
H20A-21 J055
J029=J009
H20C-21 S04-1-1
J030=J010
H21A-21 S04-2-1
J031=J011
H21C-21 S04-3-1
J032=J015
H33C-21 K002 K014 J080 K000 B090
J033=J014
H34A-21 A701 K032 K219
J034=J015
I64A-21 A768
J035=J013
G06A-21 J071 K200
J036=R020+S530 K305
J42A-21 S531
J040=R000
J44A-21 K305 J503 J505 J511
J041=R001
J44C-21 K503 J511
J042=R002
J45A-21 J043 J504 J505 J511
J043=J042
J45C-21 J503

J050=R000 J001 J002+R001 J000 J002

H22A-22 J058 J063

J051=R002 J000 J001+R000 R001 J022

H22C-22 J058 J063

J052=R003 J004 J005+R004 J003 J005

H23A-22 J059 J063

J053=R005 J003 J004+R003 R004 R005

H23C-22 J059 J063

J054=R006 J007 J008+R007 J006 J008

H24A-22 J060 J064

J055=R008 J006 J007+R006 R007 J028

H24C-22 J060 J064

J056=R009 J010 J011+R010 J009 J011

H25A-22 J061 J064

J057=R011 J009 J010+R009 R010 R011

H25C-22 J061 J064

J058=J050 J051

H26A-29 J063

J059=J052 J053

H26B-29 J063

J060=J054 J055

H26C-29 J064

J061=J056 J057

H27A-29 J064

J063=J052 J053 J058+J050 J051 J059

H28A-22 J065 J067

J064=J054 J055 J061+J056 J057 J060

H28C-22 J066 J067

J065=J063

H27B-29 J067

J066=J064

H27C-29 J067

J067=J063 J066+J064 J065

H29A-22 J068 J070

J068=J067

H16C-21 J070

J070=J071+J012 J082 J067+R012 J082 J068+GND

H30A-33 J071 J079 J073 K010

J071=J070+N044+R019+K019 K004 J035

H30C-33 J070 J083 J084 L506

J072=S04-1-0+S04-2-0+S04-3-0

H49A-23 J073 K010

J073=J072 J070+J013+Y999

H49C-23 K011 K013

J074=K010 K032+K012 K032+Y999

H56B-13 J017 J076 K002 K014 K014 K014 J014

J075=J014+J089+J086

G07B-13 K204 K205 K206 K207

J076=J074

H57A-21 J078

J077=J014+J089+J086

G09B-13 J700 K220 K208 K209 K214 K225 K227

J078=J076

H57C-21 T017 K304 K305 K216

J079=J070

J14C-21 T017

J080=J032+R014+R013

H35B-13 K008 K015 K017

J082=K004+K007

H45B-12 J070 J070 K010 K011 K300 A768 K013

J083=K002+K006+J071

H47A-23 K012 K016 J086

J084=K019+K020+J071

H46B-13 K032 K014 K016 K301 K014

J085=K005+K006

H48A-22 K031 K216

J086=J083+Y007+Y999+Y999

H47C-23 J075 J077 J090

J087=J510 J512+J522 J512+J522 J501

J74A-23 J088

J088=J087 S531+K017

J75A-21 J089 K014

J089=J088+Y999

J75C-21 K016 J075 J077

J090=J014+J086

J69A-22 K202 K203 K223

J091=R021

J77A-21 K002

J200=5527 A700+Y999
G14A-22 K224 K226
J500=J020+J021+J022
J46A-23 K223 K202 K032
J501=J000+J021+J022
J46C-28 K203 K208 J087
J502=J020+J001+J022
J47A-23 K225 K204 K209
J503=J040+J041+J043
J47C-23 K205
J504=J020+J021+J042
J48A-23 K227 K206 K214
J505=J040+J021+J042
J48C-23 K220 K207
J510=J023+J024+J025
J49B-13 K220 K208 K209 K214 K032 J087 K219
J511=J040 J041 J042
J70A-21 K512
J512=J511
J70C-21 J087 J087 K219
J520=J023+J004+J025
J50B-13 J700 K202 K203 K204 K205 K206 K207 K223
J521=J003 J024 J005
J71A-21 J522
J522=J521
J71C-21 J087 J087

J700=J077 J520+Y999

J23C-22 J701

J701=J700

J58B-11 K225 K225 K227 K227

K002=K003+J016 K009 K026+J074 S518 J032 K009+K006 R015 K208 K030 K008 C005

J091

H36A-39 K003 J083 Y001 K019

K003=K002+K007 A540 Y004+Y999+Y999

H36C-33 K002 A740 Y000 K022

K004=K005+Y000

H37A-31 K005 A740 Y003 J071 J082 K025

K005=K004+Y001

H37C-31 K004 B090 J085 Y002 K009 K020

K006=K007+Y002

H38A-31 K007 J083 J085 K002 K009 K030

K007=K006+Y003

H38C-31 K006 J082 K003 K026 K031 N057

K008=K009+J080

H39A-31 K009 K002

K009=K008+K005 K006

H39C-31 K008 K002 K002

K010=K011+J072 J082 R103 J070+Y999

H51A-32 K011 J074 K021 K027

K011=K010+J073 J082+K033

H51C-32 K010 K012 K200

K012=K013+J083 K011 K201+Y999+Y999

H52A-33 K013 J074 K201 K023

K013=K012+J073 J082+K033+N044
H52C-33 K012 A701 K116 T125
K014=K015+K030 J032 K022 K025 J074+R013 J074 J084+J074 J084 R014 J088
H53A-33 K015 A701
K015=K014+J080+Y999+Y999
H53C-33 K014 T013
K016=K017+Y999+R014 J089 J083
H54A-32 K017
K017=K016+J080+Y999
H54C-32 K016 T014 J088
K019=K002
H43A-21 J084 K031 N057 J071
K020=K005
H44A-21 J084
K021=K010
H55A-21 K016 T018 T019 T020 T024
K022=K003
H43C-21 K030 N052 K014
K023=K012
H55C-21 L507 K024
K024=K023
J66A-21 N040
K025=K004
H44C-21 N051 N052 K014
K026=K007
H34C-21 N051 K002

K027=K010

J28A-21 T022 T023 T021

K030=K031+K006 R015 J015 K022+Y999+Y999

H40A-33 K031 B011 K014 K002

K031=K030+K019 K007 K213+J085 K212+R021 K212

H40C-33 K030 B010

K032=J033 J084 J500 J510

J86A-21 K033 J074 J074 N043

K033=K032 J019

J87A-29 K011 K013

K202=K203+J090 J500 J520+Y999+Y999

G01A-33 K203 K223

K203=K202+J090 J501 J520+Y999+K221

G01C-33 K202 K222

K204=K205+J075 J052 J520+Y999+Y999

G02A-33 K205 K225

K205=K204+J075 J503 J520+Y999+K221

G02C-33 K204 K224 K224

K206=K207+J075 J504 J520+Y999+Y999

G03A-33 K207 K227

K207=K206+J075 J505 J520+Y999+K221

G03C-33 K206 K226

K208=K209+J077 J501 J510+Y999+Y999

G04A-33 K209 K002 K213 K102

K209=K208+J077 J502 J510+Y999+K221

G04C-33 K208 K212

K212=K209

G11B-11

B091 B092 K031 K031

K213=K208

G12B-11

B093 B094 B095

K031

K214=K215+J077 J504 J510+Y999

G05A-22 K215 K217

K215=K214+K217 Y514+N041

G05C-22 K214 K216 S535 S528 K228

K216=K217+K215 J078 J085+Y999

G13A-31 K217

K217=K216+K214 S504+N041

G13C-31 K216 K215 S535 S528 K228

K218=K222 K224 K226+Y999

J58A-22 T015

K219=K011 J510 J512 J033+Y999

J59C-22 K221

K220=J077+J510 J505+Y999+N042

F58C-23 K221

K221=K220 K219

J29A-21 K203 K205 K207 K209

K222=K223+K203 K304 S517 S527 S518+Y999+Y999

J68A-33 K223 K218

K223=K222+K202+J520 J500 J090+Y999

J60C-33 K222 T021

K224=K225+K205 K304 S544+K205 J200 S544+Y999

J62A-33 K225 K218

K225=K224+K204+J701 J502 J077+Y999

J61C-33 K224 T022

K226=K227+K207 J200 S544+Y999+Y999

J62A-33 K227 K218

K227=K228+K206+J701 J504 J077+Y999

J62C-33 K226 T023

K228=K215 K217+Y999

J23A-22 A196 A199 A294 A295

K230=K231+J077 J510 J503+Y999

J83A-32 K231 K233

K231=K230+Y518+Y999

J83C-32 K320 L511

K233=K230

J81C-29 Y518

K300=K301+J082 J032+Y999

H50A-32 K301

K301=K300+J084+Y999

H50C-32 K300 K302 A540

K302=K301 Y301

E64C-21 A540

K304=K305+R020 J078 S540+Y999+Y999

J43A-33 K305 K222 K224

K305=K304+J040 J078+Y999+N042

J43C-33 K304 J036

K306=S553 A768 S517 Y302+N044

J05A-28 N041

K350=R019+K351

J058-28 K351 N041

K351=K350+N041 Y300

J056-28 K350

K500=K501+K502 C500

F27A-31 K501

K503

A042 K505

K501=K500+K503 C500

F27C-31 K500 K502 A551 A472 A473 A631

K502=K503+K501 C501

F28A-31 K503 K500

K503=K502+K500 C501

F28C-31 K502 K501 A550 A540 A470 A471

K505=K500

E57A-21 A198 A556 A198

K510=K511+C450 K512

J65A-31 K511 K513

K511=K510+C450 K513

J65C-31 K510 K512

K512=K513+C451 K511

F25A-31 K513 K510

K513=K512+C451 K510

F25C-31 K512 K511

L001=M101

G64A-02 P001

L002=M102

G64B-02 P002

L003=M103

G64C-02 P003

L004=M104

G65A-02 P004

L005=M105

G65B-02 P005

L006=M106
G65C-02 P006
L007=M107
G66A-02 P007
L008=M108
G66B-02 P008
L009=M109
G66C-02 P009
L010=M110
G67A-02 P010
L011=M111
G67B-02 P011
L012=M112
G67C-02 P012
L013=M113
G68A-02 P013
L014=M114
G68B-02 P014
L015=M115
G68C-02 P015
L016=M116
G69A-02 P016
L017=M117
G69B-02 P017
L018=M118
G69C-02 P018

L019=M119
G70A-02 P019
L020=M120
G70B-02 P020
L021=M121
G70C-02 P021
L022=M122
G71A-02 P022
L023=M123
G71B-02 P023
L024=M124
G71C-02 P024
L025=M125
G72A-02 P025
L026=M126
G72B-02 P026
L027=M127
G72C-02 P027
L028=M128
G73A-02 P028
L029=M129
G73B-02 P029
L030=M130
G73C-02 P030
L031=M131
G74A-02 P031

L032=M132
G74B-02 P032
L033=M133
G74C-02 P033
L034=M134
G75A-02 P034
L035=M135
G75B-02 P035
L036=M136
G75C-02 P036
L037=M137
G76A-02 P037
L038=M138
G76B-02 P038
L039=M139
G76C-02 P039
L040=M140
G77A-02 P040
L041=M141
G77B-02 P041
L042=M142
G77C-02 P042
L043=M143
G78A-02 P043
L044=M144
G78B-02 P044

L045=M145
G78C-02 P045
L046=M146
G79A-02 P046
L047=M147
G79B-02 P047
L048=M148
G79C-02 P048
L049=M149
G80A-02 P049
L050=M150
G80B-02 P050
L051=M151
G80C-02 P051
L052=M150
G81A-02 P052
L053=M157
G81B-02 P053
L054=M157
G81C-02 P054
L055=M158
G82A-02 P055
L056=M156
G82B-02 P056
L057=M157
G82C-02 P057

L058=M158

G83A-02 P058

L059=M159

G83B-02 P059

L060=M160

G83C-02 P060

L061=M161

G84A-02 P061

L062=M162

G84B-02 P062

L063=M163

G84C-02 P063

L064=M164

G85A-02 P064

L065=M165

G85B-02 P065

L066=M166

G85C-02 P066

L067=M167

G86A-02 P067

L068=M168

G86B-02 P068

L069=M169

G86C-02 P069

L070=M170

G87A-02 P070

L071=M171

G87B-62 P071

L072=M172

G87C-62 P072

L073=M173

G88A-62 P073

L074=M174

G88B-62 P074

L075=M175

G88C-72 P075

L076=M176

G89A-62 P076

L077=M177

G89B-62 P077

L078=M178

G89C-62 P078

L079=M179

G90A-62 P079

L080=M180

G90B-62 P080

L501=M501

F89B-62 M504

L502=M502

F89C-62 M505

L503=S528+S506+S520

F71A-60 P500

L504=A767

J16C-0 DS3

L505=8539+Y999+Y999

F71B-00 K01-1

L506=J071+Y999+Y999

F71C-00 DS4

L507=K023

J16A-6 DS6

L509=8520

G90C-6 DS2

L510=8521

J30A-02 DS1

L511=K231

F89A-62 1D1-A

M501=1D1-X

F90B-01 L501

M502=1D1-W

F90C-01 L502

M503=(1D1-V) (S5-6)

F88A-87 S500 S514

M504=L501 Y501

F88B-87 S505 S547 A770

M505=L502 Y502

F88C-87 S526 S527 S520

M506=1D1-Y

F78A-87 S526 S538

M507=1D2=M
F70B-07 S521 S526 S538
M508=1D2=R
F90A-01 S549 S550
M600=1A2=A
F51A-01 B600
M601 1A2=B
F51B-1 B602
M602=1A2=C
F51C-01 B604
M603=1A2=D
F52A-01 B606
M604=1A2=E
F52B-01 B608
M605=1A2=F
F52C-01 B610
M606=1A2=H
F53A-01 B612
M607=1A2=J
F53B-01 B614
M608=1A2=K
F53C-01 B616
M609=1A2=L
F54A-01 B618
M610=1A2=M
F54B-01 B620

M611=1A2=N
F44C-01 B622
M612=1A2=R
F55A-01 B624
M613=1A2=R
F55B-01 B626
M614=1A2=S
F55C-01 B628
M615=1A2=T
F56A-01 B630
M616=1A2=W
F56B-01 B632
M617=1A2=V
F56C-01 B634
M618=1A2=W
F57A-01 B636
M619=1A2=X
F57B-01 B638
M620=1A2=Y
F57C-01 B640
M621=1A2=Z
F58A-01 B642
M622=1A2=A
F58B-01 B644
M623=1B2=A
F58C-01 B646

M624=1B2=B
F59A-01 B648
M625=1B2=C
F59B-01 B650
M626=1B2=D
F59C-01 B652
M627=1B2=E
F60A-01 B654
M628=1B2=F
F60B-01 B656
M629=1B2=H
F60C-01 B658
M630=1B2=J
G44A-01 B660
M631=1B2=K
G44B-01 B662
M632=1B2=L
G44C-01 B664
M633=1B2=M
G45A-01 B666
M634=1B2=N
G45B-01 B668
M635=1B2=P
G45C-01 B670
M636=1B2=R
G46A-01 B672

M637=1B2=8
G46B-01 B674
M638=1B2=T
G46C-01 B676
M639=1B2=U
G47A-01 B678
M640=1B2=V
G47B-01 B680
M641=1B2=W
G47C-01 B682
M642=1B2=X
G48A-01 B684
M643=1B2=Y
G48B-01 B686
M644=1B2=Z
G48C-01 B688
M645=1B2=A
G49A-01 B690
M646=1C2=A
G49B-01 B692
M647=1C2=B
G49C-01 B694
M648=1C2=E
G50A-01 B696
M649=1C2=B
G50B-01 B698

M650=1C2=E
G50C-01 B700
M651=1C2=F
G51A-01 B702
M652=1C2=H
G51B-01 B704
M653=1C2=J
G51C-01 B706
M654=1C2=K
G52A-01 B708
M655=1C2=L
G52B-01 B710
M656=1C2=M
G52C-01 B712
M657=1C2=N
G53A-01 B714
M658=1C2=R
G53B-01 B716
M659=1C2=R
G53C-01 B718
M660=1C2=S
G54A-01 B720
M661=1C2=T
G54B-01 B722
M662=1C2=U
G54C-01 B724

M663=1C2=V

G55A-01 B726

M664=1C2=W

G55B-01 B728

M665=1C2=X

G55C-01 B730

M666=1C2=Y

G56A-01 B732

M667=1C2=Z

G56B-01 B734

M668=1C2=A

G56C-01 B736

M669=1D2=A

G57A-01 B738

M670=1D2=B

G57B-01 B740

M671=1D2=C

G57C-01 B742

M672=1D2=D

G58A-01 B744

M673=1D2=E

G58B-01 B746

M674=1D2=F

G58C-01 B748

M675=1D2=G

G59A-01 B750

M676=1D2=J

G59B-01 B752

M667=1D2=K

G59C-01 B754

M678=1D2=L

G60A-07 B756

M679=1D2=M

G66B-07 B758

N040=N044+R019+N043

E49A-23 N041 N042

N041=N040 K350+K306

E48B-12 A769 K215 K217 S507 K351 S501 S502 S504

N042=N040

E15C-21 K220 A770 K305

N043=K032

J85C-29 N040

N044=Y213

J88A-11 K013 N040 S519 J071 K306

N050=J018 S530+Y999

C39B-12 C001 C011 C021 C031 C041 C051 C061

N051=J018 K025 K026+Y999

C45A-22 N053 N054

N052=K022 K025 J018+Y999

C45C-22 N055 N056

N053=N051

C44B-11 C032 C033 C042 C043 C052 C053

N054=N051

C43B-11 C002 C003 C012 C013 C022 C023

N055=N052

C42B-11 C000 C001 C010 C011 C020 C021

N056=N052+C002+C012+C022

E41B-1A C030 C031 C040 C041 C050 C051 C060

N057=C010 K019 K007+Y999

C40B-12 G020 G021 G022 G023 G024 G025 N058 D020

N058=N057

C46A-21 N059

N059=N058

C46C-21 G027 N083 G026 D040 D041

N070=C030 C040

E01A-21 D020 D024 D028

N071=C031 C040

E01C-21 D021 D025 D029

N072=C030 C041

E02A-21 D022 D026

N073=C031 C041

E02C-21 D023 D027

N074=C050 C060

E03A-21 D020 D021 D022 C023

N075=C051 C060

E03C-21 D024 D025 D026 D027

N076=C050 C061

E04A-21 D028 D029

N079=S523 S524 E030

E09B-11 G030 G031 G032 G033 G034 G036 G037

N080=N085

J39B-11 E002 E003 E012 E013 E022 E023 E032 E033

N081=S524+S523

J40B-12 E000 E001 E010 E011 E020 E021 E030 E031

N082=S523 S524 E031

E15A-21 G038 G039 G040 G041

N084=S523+S525

J80A-22 N085

N085=N084 Y516+Y999

J80C-22 N080

N086=N059 S548

J29C-21 E001 E011 E021 E081

N088=S500

B75A-21 N090 N091 N092 N093 N094

N089=S500

B75C-21 N095 N096 N097 N098 N099

N090=N088

B65B-11 H001 H002 H003 H004 H005 H006 H007 H008

N091=N088

B66B-11 H009 H010 H011 H012 H013 H014 H015 H016

N092=N088

B67B-11 H017 H018 H019 H020 H021 H022 H023 H024

H093=N088

B68B-11 H025 H026 H027 H028 H029 H030 H031 H032

N094=N088

B69B-11 H033 H034 H035 H036 H037 H038 H039 H040

N095=N089

B70B-11 H041 H042 H043 H044 H045 H046 H047 H048

N096=N089

B71B-11 H049 H050 H051 H052 H053 H054 H055 H056

N097=N089

B72B-11 H057 H058 H059 H060 H061 H062 H063 H064

N098=N089

B73B-11 H065 H066 H067 H068 H069 H070 H071 H072

N099=N089

B74B-11 H073 H074 H075 H076 H077 H078 H079 H080

P001=L001

H64A-85 1A1-A

P002=L002

H64B-85 1A1-B

P003=L003

H64C-85 1A1-C

P004=L004

H66A-85 1A1-D

P005=L005

H66B-85 1A1-E

P006=L006

H66C-85 1A1-E

P007=L007

H68A-85 1A1-H

H008=P008
H68B-85 1A1-J
P009=L009
H68C-85 1A1-K
P010=L010
H70A-85 1A1-L
P011=L011
H70B-85 1A1-M
P012=L012
H70C-85 1A1-N
P013=L013
H72A-85 1A1-P
P014=L014
H72B-85 1A1-R
P015=L015
H72C-85 1A1-S
P016=L016
H74A-85 1A1-T
P017=L017
H74B-85 1A1-U
P018=L018
H74C-85 1A1-V
P019=L019
H76A-85 1A1-W
P020=L020
H76B-85 1A1-X

P021=L021

H76C-85 1A1-Y

P022=L022

H78A-85 1B1-A

P023=L023

H78B-85 1B1-B

P024=L024

H78C-85 1B1-C

P025=L025

H80A-85 1B1-D

P026=L026

H80B-85 1B1-E

P027=L027

H80C-85 1B1-F

P028=L028

H82A-85 1B1-H

P029=L029

H82B-85 1B1-J

P030=L030

H82C-85 1B1-K

P031=L031

H84A-85 1B1-L

P032=L032

H84B-85 1B1-M

P033=L033

H84C-85 1B1-N

P034=L034
H86A-85 1B1-P
H035=L035
H86B-85 1B1-R
H036=L036
H86C-85 1B1-S
P037=L037
H88A-85 1B1-T
H038=L038
H88B-85 1B1-U
H039=L039
H88C-85 1B1-V
H040=L040
H90A-85 1B1-W
H041=L041
H90B-85 1B1-X
H042=L042
H90C-85 1B1-Y
P043=L043
I66A-85 1C1-A
H044=L044
I66B-85 1C1-B
H045=L045
I66C-85 1C1-C
H046=L046
I68A-85 1C1-D

P047=L047
I68B-85 1C1-E
P048=L048
I68C-85 1C1-F
P049=L049
I76A-85 1C1-H
P050=L050
I76B-85 1C1-J
P051=L051
I76C-85 1C1-K
P052=L052
I72A-85 1C1-L
P053=L053
I72B-85 1C1-M
P054=L054
I72C-85 1C1-N
P055=L055
I74A-85 1C1-P
P056=L056
I74B-85 1C1-R
P057=L057
I74C-85 1C1-S
P058=L058
I76A-85 1C1-T
P059=L059
I76B-85 1C1-U

P060=L060
I76C-85 1C1-V
P061=L061
I78A-85 1C1-W
P062=L062
I78B-85 1C1-X
P063=L063
I78C-85 1C1-Y
P064=L064
I80A-85 1D1-A
P065=L065
I80B-85 1D1-B
P066=L066
I80C-85 1D1-C
P067=L067
I82A-85 1D1-D
P068=L068
I82B-85 1D1-E
P069=L069
I82C-85 1D1-F
P070=L070
I84A-85 1D1-H
P071=L071
I84B-85 1D1-J
P072=L072
I84C-85 1D1-K

H073=L073

I86A-85 1D1-L

H074=L074

I86B-85 1D1-M

H075=L075

I86C-85 1D1-N

H076=L076

I88A-85 1D1-p

H077=L077

I88B-85 1D1-R

H078=L078

I88C-85 1D1-S

H079=L079

I90A-85 1D1-T

H080=L080

I90B-85 1D1-U

H500=L503

I90C-85 1D1-Z

* H080=1E1-A1 1E2-A1+1E1-A2 1E2-A2

H01A-R16 J000 J050 J051 J040

* H001=1E1-A3 1E2-A3+1E1-A4 1E2-A4

H01C-R16 J001 J050 J051 J041

* H002=1E1-A5 1E2-A5+1E1-A6 1E2-A6

H02A-R16 B032 J002 J051 J042

* H003=1E1-A7 1E2-A7+1E1-A8 1E2-A8

H02C-R16 J003 J052 J053

* PJB cards in 3446-A/B with FV465-A is installed, and in 3446-C.

* R004=1E1-A9 1E2-A9+1E1-A10 1E2-A10
 H03A-R16 B205 J004 J052 J053
 * R005=1E1-B1 1E2-B1+1E1-B2 1E2-B2
 H03C-R16 B206 J005 J053 J053
 * R006=1E1-B3 1E2-B3+1E1-B4 1E2-B4
 H04A-R16 B207 J006 J054 J055
 * R007=1E1-B5 1E2-B5+1E1-B6 1E2-B6
 H04C-R16 B209 J007 J054 J055
 * R008=1E1-B7 1E2-B7+1E1-B8 1E2-B8
 H05A-R16 B032 B210 J008 J055
 * R009=1E1-B9 1E2-B9+1E1-B10 1E2-B10
 H05C-R16 B212 J009 J056 J057
 * R010=1E1-C1 1E2-C1+1E1-C2 1E2-C2
 H06A-R16 B213 J010 J056 J057
 * R011=1E1-C3 1E2-C3+1E1-C4 1E2-C4
 H06C-R16 B214 J011 J057 J057
 * R012=1E1-C5 1E2-C5+1E1-C6 1E2-C6
 H07A-R16 J012 J070
 * R013=1E1-D5 1E2-D5+1E1-D6 1E2-D6
 H07C-R16 J013 J080 K010 K014
 * R014=1E1-D7 1E2-D7+1E1-D8 1E2-D8
 H08A-R16 J014 J080 K014 K016
 * R015=1E1-D9+1E2-D9+1E1-D10 1E2-D10
 H08C-R16 A740 K002 J015 K030
 * R017=1E1-D3 1E2-D3+1E1-D4 1E2-D4
 H09A-R16 J017

* PJB cards in 3446-A/B with FV465-A is installed, and in 3446-C.

* R019=1E1-F3 1E2-F3+1E1-F4 1E2-F4

H09C-R16 J010 N040 J071 K350

* R020=1E1-C7 1E2-C7+1E1-C8 1E2-C8

J41A-R16 J036 K304

* R021=1F1-C9 1F2-C9+1F1-C10 1F2-C10

J70A-R16 J091 K031

S001=

B01A-R56 H001

S002=

B01B-R56 H002

S003=

B01C-R56 H003

S004=

B01D-R56 H004

S005=

B02A-R56 H005

S006=

B02B-R56 H006

S007=

B02C-R56 H007

S008=

B02D-R56 H008

S009=

B03A-R56 H009

S010=

B03B-R56 H010

* PJB cards in 3446-A/B with FV465-A is installed, and in 3446-C.

S011=
B03C-R56 H011
S012=
B03D-R56 H012
S013=
B04A-R56 H013
S014=
B04B-R56 H014
S015=
B04C-R56 H015
S016=
B04D-R56 H016
S017=
B05A-R56 H017
S018=
B05B-R56 H018
S019=
B05C-R56 H019
S020=
B05D-R56 H020
S021=
B06A-R56 H021
S022=
B06B-R56 H022
S023=
B06C-R56 H023

S024=

B06D-R56 H024

S025=

B07A-R56 H025

S026=

B07B-R56 H026

S027=

B07C-R56 H027

S026=

B07D-R56 H028

S029=

B08A-R56 H029

S030=

B08B-R56 H030

S031=

B08C-R56 H031

S032=

B08D-R56 H032

S033=

B09A-R56 H033

S034=

B09B-R56 H034

S035=

B09C-R56 H035

S036=

B09D-R56 H036

S037=

B10A-256 H037

S038=

B10B-256 H038

S039=

B10C-256 H039

S040=

B10D-256 H040

S041=

B11A-256 H041

S042=

B11B-256 H042

S043=

B11C-256 H043

S044=

B11D-256 H044

S045=

B12A-256 H045

S046=

B12B-256 H046

S047=

B12C-256 H047

S048=

B12D-256 H048

S049=

B13A-256 H049

S050=

B13B-R56 H050

S051=

B13C-R56 H051

S052=

B13D-R56 H052

S053=

B14A-R56 H053

S054=

B14B-R56 H054

S055=

B14C-R56 H055

S056=

B14D-R56 H056

S057=

B15A-R56 H057

S058=

B15B-R56 H058

S059=

B15C-R56 H059

S060=

B15D-R56 H060

S061=

B16A-R56 H061

S062=

B16B-R56 H062

S063=
B16C-R56 H063
S064=
B16D-R56 H064
S065=
B17A-R56 H065
S066=
B17B-R56 H066
S067=
B17C-R56 H067
S068=
B17D-R56 H068
S069=
B18A-R56 A069
S070=
B18B-R56 H070
S071=
B18C-R56 H071
S072=
B18D-R56 H072
S073=
B19A-R56 H073
S074=
B19B-R56 H074
S075=
B19C-R56 H075

S076=

B19D-256 H076

S077=

B20A-256 H077

S078=

B20B-256 H078

S079=

B20C-256 H079

S080=

B20D-256 H080

S500=S501+M503 S513+Y999

F85A-32 S501 N088 N089 S509

S501=S500+S503 S515+N041

F85C-32 S500 S503 S508 S509 S511

S502=S503+S514+N041

F84A-32 S503

S503=S502+S501 S508+Y999

F84C-32 S502 S515 S501 A040

S504=S505+S537 S507+N041

F75A-32 S505 S517 K217

S505=S504+M504 S507+Y999

F75C-32 S504 S507 S516 S519 S531

S506=S507+S537 S519+Y999

F73A-32 S507 L503 K216

S507=S506+S505 S540+N041

F73C-32 S506 S504 S505

S508=S501 Y503

F83A-21 S503 B800 S522 S801

S509=S500

F83C-21 S522 B800 B801

S511=S501

F82A-21 S512 S533

S512=S511 Y504

F82C-21 S513

S513=S512 Y505

F81A-21 S500 S514 S533

S514=M503+S513

F80A-22 S502

S515=S503 Y506

F81C-21 S501 A040

S516=S505 Y507

F79A-21 S543 S519

S517=S504

F79C-21 K222 S543 K306

S518=S519+S536+C061 C041

F74A-32 S519 K002 K222 S539

S519=S518+S505 S516+N044

F74C-32 S518 A750 S506 S540 S530

S520=M505 Y513

F87A-21 S529 S537 L503

S521=M507

F77A-21 T020 L510

S522=S521+S509 S508

E17A-31 S521 S525 D030 D031

S523=S522+S525 Y510

E17C-31 S522 N081 N082 S524 N084 N079

S524=S525+S523 Y508

E18A-31 S525 N081 N082 N079

S525=S524+S522+Y509

E18C-31 S524 N084 S523 D030 D031

S526=S527+M508 M507 M505

F76A-31 S527 S534 L509

S527=S526+S538 M505

F76C-31 S526 J200 K222 S528

S528=S527+K217

F72C-22 L503

S529=S520

F87C-21 S546 T020

S530=S519 Y512+Y999

F72A-21 A750 N050 J036

S531=S553 J036 S505 Y531

G15A-21 T019 S541 J088

S583=S511+S513

F80C-22

S534=S526

F77C-21 T018

S535=J017 J018+J117 J118+K217

F50A-23 S536

S536=S535+Y999

H48C-22 S518

S537=S520

F86A-21 S504 S506

S538=M500 M507
F86C-21 S527
S539=S510
J21A-21 A769 L505 S553
S540=S519
J21C-21 S507 K216 A770
S541=S531
J14A-21 A701
S543=S510 S517
C70C-29 S544
S544=S543
E64A-21 K224 K224 K226
S545=S547 Y515
J68A-21 S548
S546=S547+S529
J67A-31 S547
S547=S540+M504
J67C-31 S546 S545 S548
S548=S545 S547
J68C-21 N083 A294 A295
S549=M500
J81A-29 S551
S550=S551+M500
J82A-31 S551 S552 A040
S551=S550+S549
J82C-31 S550

S552=5550 Y517

J87B-28 A040

S553=5539

J87B-28 S531 K306

* T013=K015

J06A-R14 1E1-E1 1E2-E1 1E1-E2 1E2-E2

* T014=K017

J06C-R14 1E1-E3 1E2-E3 1E1-E4 1E2-E4

* T015=K210

J07A-R14 S04-E-COMM S04-D-COMM

* T017=J079 J078

J07C-R14 1E1-E7 1E2-E7 1E1-E8 1E2-E8

* T018=5534 K021

J08A-R14 1F1-A1 1F2-A1 1F1-A2 1F2-A2

* T019=5531 K021

J08C-R14 1F1-A3 1F2-A3 1F1-A4 1F2-A4

* T020=5521 K021 S529

J09A-R14 1F1-A5 1F2-A5 1F1-A6 1F2-A6

* T021=K223 K027

J09C-R14 1F1-A7 1F2-A7 1F1-A8 1F2-A8

* T022=K225 K027

J24A-R14 1F1-A9 1F2-A9 1F1-A10 1F2-A10

* T023=K227 K027

J24C-R14 1F1-B1 1F2-B1 1F1-B2 1F2-B2

* T024=A701 K021

J25A-R14 1F1-B3 1F2-B3 1F1-B4 1F2-B4

* JJA cards in 3446-A/B with FV465-A is installed, and in 3446-C.

*T025=y999

J25C-R14 1F1-C3 1F2+C3 1F1-C4 1F2-C4

Y000=K003 (1 USEC J17-1)

H41A-97 K004

Y001=K002 (1 USEC J17-2)

H41C-97 K005

Y002=K005 (1 USEC J17-3)

H42A-97 K006

Y003=K004 (1 USEC J17-4)

H42C-97 K007

Y004=A540 K007 (1 USEC)

J20-5 K003

Y005=J017 (1 USEC J17-5)

I63A-97 J018

Y006=R015 (2 USEC)

D50-3 J015

Y007=J083 (.5 USEC.)

J17-12 J086

Y009=R020 J078 S540 (1 USEC)

J18-4 K304

Y213=POWER ON (300 MS)

J22-2,4,6,8 N044

Y300=N041 (2 USEC)

J79-5 K351

Y301=K301 (2 USEC)

E50-5# G63-4 K302

Y302=8553 A768 S517 (0.5 USEC)

J17-11 K306

Y406=A754 (0.8 USEC)

G63-5 A752

Y407=A760 (0.8 USEC)

J18-5 A764

* JJA card in 3446-A/B with FV465-A is installed, and in 3446-C.

Y408=A751 (5 USEC)
G63-6 A754
Y409=A750 (5 USEC)
G62-6 A755
Y410=A761 (5 USEC)
E50-6 A762
Y411=A763 (5 USEC)
J18-6 A761
Y412=A760 (5 USEC)
J19-6 A763
Y413=A040 (2 USEC)
D50-11 A043
Y500=(800 USEC)
G62-10, G63-10 S5-5
Y501=L501 (800 USEC)
G62-11 M504
Y502=L502 (800 USEC)
G62-12 M505
Y503=S501 (2 USEC)
D50-8 S508
Y504=S511 (1 MS)
J18-10 J19-10 S512
Y505=S512 (400 USEC)
E50-10 S513
Y506=S503 (2 USEC)
D50-9 S515

Y507=S505 (2 USEC)
D50-10 S516

Y508=S523 (4 USEC)
J20-4+6 E50-4 S524

Y509=S522 (20 USEC)
J20-7 S525

Y510=S525 (150 USEC)
E50-9 S523

Y512=S519 (2 USEC)
D50-7 S530

Y513=M505 (2 USEC)
D50-12 S520

Y514=K217 (20 USEC)
J18-7 K215

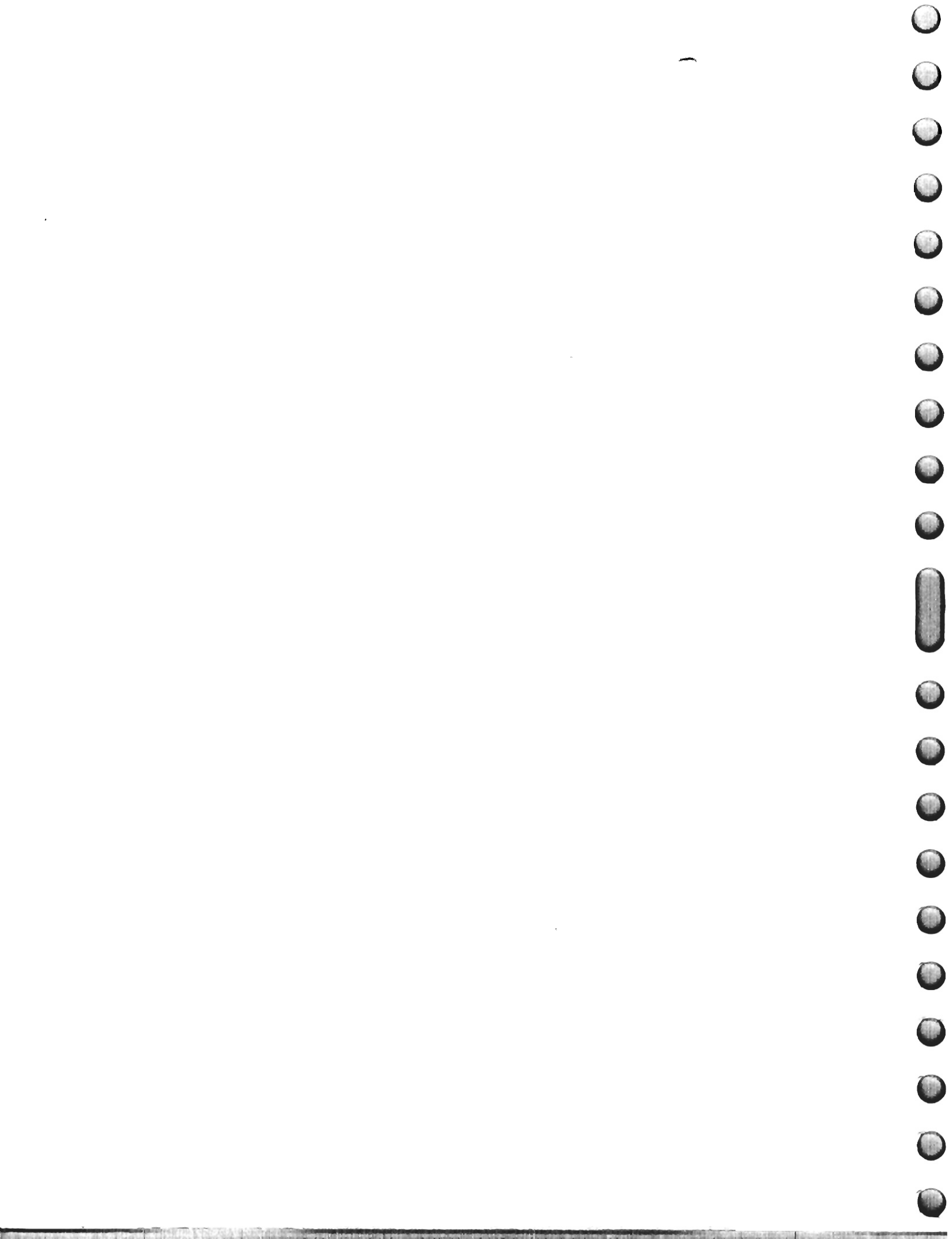
Y515=S547 (4 USEC)
J79-1+2 S545

Y516=N084 (20 USEC)
J20-8 N085

Y517=S550 (4 USEC)
J79-3+4 S552

Y518=K233 (30 USEC. G63-7)
J84A-97 K231

Y531=S553 J036 S505 (2 USEC)
J79-12 S531



PART 6

WIRE LISTS



A040	15	1B089	1	1F084	10	25171900	3446
A040	27	1B089	2	1J082	5	25171900	3446
A040	4	1F084	10	1F081	11	25171900	3446
A040	3	1J082	5	1J081	8	25171900	3446
A041	6	1B089	7	1C089	12	25171900	3446
A041	5	1B089	8	1GND		25171900	3446
A041	7	1C089	12	1E090	8	25171900	3446
A041	9	1E070	10	1E053	12	25171900	3446
A041	10	1E090	8	1E070	10	25171900	3446
A042	30	1B089	12	1F027	3	25171900	3446
A042	4	1B090	1	1B089	12	25171900	3446
A042	2	1F027	3	1F026	2	25171900	3446
A043	19	1B089	6	1D050	11	25171900	3446
A043	2	1B090	7	1B089	6	25171900	3446
A100	4	1G017	1	1G016	12	25171900	3446
A100	6	1G017	1	1G029	6	25171900	3446
A100	5	1G017	2	1GND		25171900	3446
A101	3	1G017	7	1G016	11	25171900	3446
A101	6	1G017	7	1G029	12	25171900	3446
A101	8	1G017	8	1E016	12	25171900	3446
A102	6	1G028	12	1G017	12	25171900	3446
A102	4	1G029	1	1G028	12	25171900	3446
A103	6	1G028	11	1G017	6	25171900	3446
A103	3	1G029	7	1G028	11	25171900	3446
A110	4	1G018	1	1G016	10	25171900	3446
A110	7	1G018	1	1G029	11	25171900	3446
A110	5	1G018	2	1GND		25171900	3446
A110	3	1G029	11	1G030	6	25171900	3446
A111	3	1G018	7	1G016	9	25171900	3446
A111	6	1G018	7	1G029	10	25171900	3446
A111	8	1G018	8	1E016	11	25171900	3446
A111	2	1G029	10	1G030	12	25171900	3446
A112	6	1G028	10	1G018	12	25171900	3446
A112	3	1G030	1	1G028	10	25171900	3446
A113	6	1G028	9	1G018	6	25171900	3446
A113	3	1G030	7	1G028	9	25171900	3446
A120	3	1G019	1	1G016	8	25171900	3446
A120	6	1G019	1	1G029	9	25171900	3446
A120	5	1G019	2	1GND		25171900	3446
A120	2	1G029	9	1G030	11	25171900	3446
A120	3	1G030	11	1G031	6	25171900	3446
A121	3	1G019	7	1G016	7	25171900	3446
A121	6	1G019	7	1G029	8	25171900	3446
A121	8	1G019	8	1E016	10	25171900	3446
A121	2	1G029	8	1G030	10	25171900	3446
A121	2	1G030	10	1G031	12	25171900	3446
A122	5	1G028	8	1G019	12	25171900	3446
A122	4	1G031	1	1G028	8	25171900	3446
A123	5	1G028	7	1G019	6	25171900	3446
A123	3	1G031	7	1G028	7	25171900	3446
A130	4	1G020	1	1G016	6	25171900	3446
A130	7	1G020	1	1G032	6	25171900	3446
A130	5	1G020	2	1GND		25171900	3446
A130	5	1G032	6	1G040	12	25171900	3446
A131	4	1G020	7	1G016	5	25171900	3446
A131	7	1G020	7	1G032	12	25171900	3446
A131	8	1G020	8	1E016	9	25171900	3446
A131	5	1G032	12	1G040	11	25171900	3446
A132	5	1G028	6	1G020	12	25171900	3446
A132	4	1G032	1	1G028	6	25171900	3446
A133	5	1G028	5	1G020	6	25171900	3446
A133	4	1G032	7	1G028	5	25171900	3446

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A140	5	1G021	1	1G026	12	25171900	3446
A140	5	1G021	2	1GND		25171900	3446
A140	4	1G026	12	1G032	11	25171900	3446
A140	3	1G032	11	1G033	6	25171900	3446
A140	5	1G033	6	1G040	10	25171900	3446
A141	4	1G021	7	1G026	11	25171900	3446
A141	8	1G021	8	1E016	8	25171900	3446
A141	4	1G026	11	1G032	10	25171900	3446
A141	2	1G032	10	1G033	12	25171900	3446
A141	5	1G033	12	1G040	9	25171900	3446
A142	7	1G033	1	1G021	12	25171900	3446
A142	4	1G033	1	1G039	6	25171900	3446
A143	7	1G033	7	1G021	6	25171900	3446
A143	4	1G033	7	1G039	5	25171900	3446
A150	4	1G022	1	1G026	10	25171900	3446
A150	5	1G022	2	1GND		25171900	3446
A150	4	1G026	10	1G032	9	25171900	3446
A150	2	1G032	9	1G033	11	25171900	3446
A150	3	1G033	11	1G034	6	25171900	3446
A150	4	1G034	6	1G040	8	25171900	3446
A151	4	1G022	7	1G026	9	25171900	3446
A151	4	1G022	8	1G027	12	25171900	3446
A151	4	1G026	9	1G032	8	25171900	3446
A151	2	1G032	8	1G033	10	25171900	3446
A151	2	1G033	10	1G034	12	25171900	3446
A151	4	1G034	12	1G040	7	25171900	3446
A152	7	1G034	1	1G022	12	25171900	3446
A152	4	1G034	1	1G039	4	25171900	3446
A153	7	1G034	7	1G022	6	25171900	3446
A153	4	1G034	7	1G039	3	25171900	3446
A160	4	1G023	1	1G026	8	25171900	3446
A160	5	1G023	2	1GND		25171900	3446
A160	5	1G026	8	1G035	6	25171900	3446
A160	4	1G035	6	1G041	12	25171900	3446
A161	3	1G023	7	1G026	7	25171900	3446
A161	3	1G023	8	1G027	11	25171900	3446
A161	5	1G026	7	1G035	12	25171900	3446
A161	4	1G035	12	1G041	11	25171900	3446
A162	7	1G035	1	1G023	12	25171900	3446
A162	3	1G035	1	1G039	2	25171900	3446
A163	7	1G035	7	1G023	6	25171900	3446
A163	4	1G035	7	1G039	12	25171900	3446
A170	3	1G024	1	1G026	6	25171900	3446
A170	5	1G024	2	1GND		25171900	3446
A170	6	1G026	6	1G035	11	25171900	3446
A170	3	1G035	11	1G036	6	25171900	3446
A170	4	1G036	6	1G041	10	25171900	3446
A171	3	1G024	7	1G026	5	25171900	3446
A171	3	1G024	8	1G027	10	25171900	3446
A171	6	1G026	5	1G035	10	25171900	3446
A171	2	1G035	10	1G036	12	25171900	3446
A171	4	1G036	12	1G041	9	25171900	3446
A172	7	1G036	1	1G024	12	25171900	3446
A172	4	1G036	1	1G039	11	25171900	3446
A173	7	1G036	7	1G024	6	25171900	3446
A173	3	1G036	7	1G039	10	25171900	3446
A180	3	1G025	1	1G027	6	25171900	3446
A180	5	1G025	2	1GND		25171900	3446
A180	5	1G027	6	1G035	9	25171900	3446
A180	2	1G035	9	1G036	11	25171900	3446
A180	3	1G036	11	1G037	6	25171900	3446
A180	4	1G037	6	1G041	8	25171900	3446

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A181	3	1G025	7	1G027	5	25171900	3446
A181	3	1G025	8	1G027	9	25171900	3446
A181	5	1G027	5	1G035	8	25171900	3446
A181	3	1G035	8	1G036	10	25171900	3446
A181	2	1G036	10	1G037	12	25171900	3446
A181	4	1G037	12	1G041	7	25171900	3446
A182	7	1G037	1	1G025	12	25171900	3446
A182	3	1G037	1	1G039	9	25171900	3446
A183	7	1G037	7	1G025	6	25171900	3446
A183	3	1G037	7	1G039	8	25171900	3446
A184	6	1G040	1	1G029	5	25171900	3446
A184	6	1G040	2	1G030	5	25171900	3446
A184	5	1G040	3	1G031	5	25171900	3446
A185	6	1G041	1	1G029	4	25171900	3446
A185	6	1G041	2	1G030	4	25171900	3446
A185	6	1G041	3	1G031	4	25171900	3446
A185	5	1G041	4	1G032	5	25171900	3446
A185	5	1G041	5	1G033	5	25171900	3446
A185	4	1G041	6	1G034	5	25171900	3446
A186	6	1G042	1	1G032	4	25171900	3446
A186	5	1G042	2	1G033	4	25171900	3446
A186	5	1G042	3	1G034	4	25171900	3446
A186	4	1G042	4	1G035	5	25171900	3446
A186	4	1G042	5	1G036	5	25171900	3446
A186	4	1G042	6	1G037	5	25171900	3446
A188	6	1G038	1	1G027	4	25171900	3446
A188	3	1G038	1	1G040	6	25171900	3446
A188	3	1G040	6	1G042	12	25171900	3446
A189	6	1G038	7	1G027	8	25171900	3446
A190	13	1G016	1	1G043	6	25171900	3446
A191	9	1G026	1	1G043	5	25171900	3446
A192	8	1G027	1	1G043	4	25171900	3446
A193	8	1G028	1	1G043	12	25171900	3446
A194	4	1G039	1	1G043	11	25171900	3446
A195	3	1G039	7	1G043	10	25171900	3446
A196	22	1E016	7	1H060	12	25171900	3446
A196	17	1E016	7	1J023	6	25171900	3446
A196	3	1H060	12	1H063	6	25171900	3446
A197	4	1G043	1	1F049	12	25171900	3446
A197	24	1G043	2	1B085	12	25171900	3446
A198	3	1E057	8	1E057	4	25171900	3446
A198	16	1F026	8	1E057	6	25171900	3446
A198	11	1F036	12	1E057	8	25171900	3446
A198	25	1G043	7	1B089	11	25171900	3446
A198	9	1G043	7	1F026	8	25171900	3446
A198	5	1G043	8	1F036	12	25171900	3446
A199	16	1G027	7	1H063	5	25171900	3446
A199	11	1G027	7	1J023	5	25171900	3446
A199	3	1H063	5	1H060	11	25171900	3446
A200	3	1F002	1	1F001	6	25171900	3446
A200	9	1F002	1	1G017	11	25171900	3446
A201	6	1F002	7	1F012	6	25171900	3446
A210	3	1F003	1	1F001	5	25171900	3446
A210	9	1F003	1	1G018	11	25171900	3446
A211	5	1F003	7	1F012	5	25171900	3446
A220	3	1F004	1	1F001	4	25171900	3446
A220	9	1F004	1	1G019	11	25171900	3446
A221	5	1F004	7	1F012	4	25171900	3446
A230	3	1F005	1	1F001	3	25171900	3446
A230	9	1F005	1	1G020	11	25171900	3446
A231	4	1F005	7	1F012	3	25171900	3446
A240	4	1F006	1	1F001	2	25171900	3446

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A240	9	1F006	1	1G021	11	25171900	3446
A241	4	1F006	7	1F012	2	25171900	3446
A250	5	1F007	1	1F001	12	25171900	3446
A250	9	1F007	1	1G022	11	25171900	3446
A251	4	1F007	7	1F012	12	25171900	3446
A260	5	1F008	1	1F001	11	25171900	3446
A260	9	1F008	1	1G023	11	25171900	3446
A261	3	1F008	7	1F012	11	25171900	3446
A270	5	1F009	1	1F001	10	25171900	3446
A270	9	1F009	1	1G024	11	25171900	3446
A271	3	1F009	7	1F012	10	25171900	3446
A280	6	1F010	1	1F001	9	25171900	3446
A280	9	1F010	1	1G025	11	25171900	3446
A281	3	1F010	7	1F012	9	25171900	3446
A290	6	1F011	1	1F001	8	25171900	3446
A290	14	1F011	1	1G038	12	25171900	3446
A291	2	1F011	7	1F012	8	25171900	3446
A292	26	1F001	1	1H058	5	25171900	3446
A293	25	1F001	7	1H058	4	25171900	3446
A294	23	1F012	1	1H063	4	25171900	3446
A294	15	1F012	1	1J023	4	25171900	3446
A294	10	1H063	4	1J068	11	25171900	3446
A295	23	1F012	7	1H063	3	25171900	3446
A295	14	1F012	7	1J023	3	25171900	3446
A295	10	1H063	3	1J068	10	25171900	3446
A300	6	1F014	1	1F002	12	25171900	3446
A300	3	1F014	1	1F013	6	25171900	3446
A301	6	1F014	7	1F024	6	25171900	3446
A310	6	1F013	5	1F003	12	25171900	3446
A310	3	1F015	1	1F013	5	25171900	3446
A311	5	1F015	7	1F024	5	25171900	3446
A320	6	1F013	4	1F004	12	25171900	3446
A320	3	1F016	1	1F013	4	25171900	3446
A321	5	1F016	7	1F024	4	25171900	3446
A330	5	1F013	3	1F005	12	25171900	3446
A330	4	1F017	1	1F013	3	25171900	3446
A331	5	1F017	7	1F024	3	25171900	3446
A340	5	1F013	2	1F006	12	25171900	3446
A340	4	1F018	1	1F013	2	25171900	3446
A341	4	1F018	7	1F024	2	25171900	3446
A350	5	1F013	12	1F007	12	25171900	3446
A350	5	1F019	1	1F013	12	25171900	3446
A351	4	1F019	7	1F024	12	25171900	3446
A360	4	1F013	11	1F008	12	25171900	3446
A360	5	1F020	1	1F013	11	25171900	3446
A361	4	1F020	7	1F024	11	25171900	3446
A370	3	1F013	10	1F009	12	25171900	3446
A370	5	1F021	1	1F013	10	25171900	3446
A371	3	1F021	7	1F024	10	25171900	3446
A380	3	1F013	9	1F010	12	25171900	3446
A380	6	1F022	1	1F013	9	25171900	3446
A381	3	1F022	7	1F024	9	25171900	3446
A390	3	1F013	8	1F011	12	25171900	3446
A390	6	1F023	1	1F013	8	25171900	3446
A391	2	1F023	7	1F024	8	25171900	3446
A392	23	1F013	1	1I058	12	25171900	3446
A393	22	1F013	7	1I058	11	25171900	3446
A394	19	1F024	1	1I058	6	25171900	3446
A395	18	1F024	7	1I058	5	25171900	3446
A400	3	1C077	1	1C078	6	25171900	3446
A400	5	1C077	2	1GND		25171900	3446
A400	15	1C078	6	1E051	12	25171900	3446

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A401	3	1C077	7	1C078	12	25171900	3446
A401	13	1C077	8	1E054	12	25171900	3446
A401	14	1C078	12	1E051	11	25171900	3446
A402	13	1C077	12	1E052	12	25171900	3446
A402	4	1C078	1	1C077	12	25171900	3446
A403	14	1C077	6	1E052	11	25171900	3446
A403	2	1C078	7	1C077	6	25171900	3446
A404	10	1E060	1	1C077	11	25171900	3446
A405	10	1E061	1	1C077	5	25171900	3446
A410	14	1C078	11	1E051	10	25171900	3446
A410	4	1C079	1	1C078	11	25171900	3446
A410	3	1C079	1	1C080	6	25171900	3446
A410	5	1C079	2	1GND		25171900	3446
A411	14	1C078	10	1E051	9	25171900	3446
A411	3	1C079	7	1C078	10	25171900	3446
A411	3	1C079	7	1C080	12	25171900	3446
A411	14	1C079	8	1E054	11	25171900	3446
A412	14	1C079	12	1E052	10	25171900	3446
A412	4	1C080	1	1C079	12	25171900	3446
A413	14	1C079	6	1E052	9	25171900	3446
A413	2	1C080	7	1C079	6	25171900	3446
A414	10	1E062	1	1C079	11	25171900	3446
A415	10	1E063	1	1C079	5	25171900	3446
A420	14	1C078	9	1E051	8	25171900	3446
A420	3	1C080	11	1C078	9	25171900	3446
A420	4	1C081	1	1C080	11	25171900	3446
A420	3	1C081	1	1C082	6	25171900	3446
A420	5	1C081	2	1GND		25171900	3446
A421	14	1C078	8	1E051	7	25171900	3446
A421	3	1C080	10	1C078	8	25171900	3446
A421	3	1C081	7	1C080	10	25171900	3446
A421	3	1C081	7	1C082	12	25171900	3446
A421	14	1C081	8	1E054	10	25171900	3446
A422	15	1C081	12	1E052	8	25171900	3446
A422	4	1C082	1	1C081	12	25171900	3446
A423	15	1C081	6	1E052	7	25171900	3446
A423	2	1C082	7	1C081	6	25171900	3446
A424	10	1E065	1	1C081	11	25171900	3446
A425	10	1E066	1	1C081	5	25171900	3446
A430	3	1C083	1	1C084	6	25171900	3446
A430	5	1C083	2	1GND		25171900	3446
A430	15	1C084	6	1E055	12	25171900	3446
A430	4	1E055	12	1E051	6	25171900	3446
A431	3	1C083	7	1C084	12	25171900	3446
A431	15	1C083	8	1E054	9	25171900	3446
A431	15	1C084	12	1E055	11	25171900	3446
A431	4	1E055	11	1E051	5	25171900	3446
A432	15	1C083	12	1E052	6	25171900	3446
A432	4	1C084	1	1C083	12	25171900	3446
A433	15	1C083	6	1E052	5	25171900	3446
A433	2	1C084	7	1C083	6	25171900	3446
A434	10	1E067	1	1C083	11	25171900	3446
A435	11	1E067	7	1C083	5	25171900	3446
A440	15	1C084	11	1E055	10	25171900	3446
A440	4	1C085	1	1C084	11	25171900	3446
A440	3	1C085	1	1C086	6	25171900	3446
A440	5	1C085	2	1GND		25171900	3446
A440	4	1C086	6	1C090	12	25171900	3446
A441	15	1C084	10	1E055	9	25171900	3446
A441	3	1C085	7	1C084	10	25171900	3446
A441	3	1C085	7	1C086	12	25171900	3446
A441	16	1C085	8	1E054	8	25171900	3446

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A441	3	1C086	12	1C090	11	25171900	3446
A442	16	1C085	12	1E053	11	25171900	3446
A442	4	1C086	1	1C085	12	25171900	3446
A443	16	1C085	6	1E053	10	25171900	3446
A443	2	1C086	7	1C085	6	25171900	3446
A444	10	1E068	1	1C085	11	25171900	3446
A445	11	1E068	7	1C085	5	25171900	3446
A450	3	1C087	1	1C088	6	25171900	3446
A450	5	1C087	2	1GND		25171900	3446
A450	3	1C088	6	1C090	10	25171900	3446
A450	17	1C090	10	1E056	12	25171900	3446
A451	3	1C087	7	1C088	12	25171900	3446
A451	16	1C087	8	1E054	7	25171900	3446
A451	3	1C088	12	1C090	9	25171900	3446
A451	17	1C090	9	1E056	11	25171900	3446
A452	16	1C087	12	1E053	9	25171900	3446
A452	4	1C088	1	1C087	12	25171900	3446
A453	17	1C087	6	1E053	8	25171900	3446
A453	2	1C088	7	1C087	6	25171900	3446
A454	10	1E069	1	1C087	11	25171900	3446
A455	11	1E069	7	1C087	5	25171900	3446
A460	16	1C088	11	1E056	10	25171900	3446
A460	3	1C089	1	1C090	8	25171900	3446
A460	3	1C090	8	1C088	11	25171900	3446
A461	17	1C089	7	1E054	6	25171900	3446
A462	4	1E058	1	1E060	12	25171900	3446
A462	4	1E058	2	1E063	12	25171900	3446
A462	5	1E058	3	1E066	12	25171900	3446
A463	3	1E058	7	1E061	12	25171900	3446
A463	4	1E058	8	1E062	12	25171900	3446
A463	5	1E058	9	1E066	11	25171900	3446
A464	4	1E059	1	1E060	11	25171900	3446
A464	4	1E059	2	1E062	11	25171900	3446
A464	5	1E059	3	1E066	10	25171900	3446
A465	3	1E059	7	1E061	11	25171900	3446
A465	4	1E059	8	1E063	11	25171900	3446
A465	5	1E059	9	1E065	12	25171900	3446
A466	6	1E070	1	1E060	10	25171900	3446
A466	5	1E070	2	1E063	10	25171900	3446
A466	4	1E070	3	1E065	11	25171900	3446
A467	5	1E070	7	1E061	10	25171900	3446
A467	5	1E070	8	1E062	10	25171900	3446
A467	4	1E070	9	1E065	10	25171900	3446
A468	6	1E071	1	1E060	9	25171900	3446
A468	6	1E071	2	1E062	9	25171900	3446
A468	4	1E071	3	1E065	9	25171900	3446
A469	6	1E071	7	1E061	9	25171900	3446
A469	5	1E071	8	1E063	9	25171900	3446
A469	4	1E071	9	1E066	9	25171900	3446
A470	5	1E051	1	1E057	12	25171900	3446
A470	13	1E051	2	1F028	9	25171900	3446
A470	21	1E051	3	1B090	6	25171900	3446
A471	18	1C090	1	1E057	11	25171900	3446
A471	29	1C090	2	1F028	8	25171900	3446
A471	5	1C090	3	1B090	5	25171900	3446
A472	5	1E052	1	1E057	10	25171900	3446
A472	13	1E052	2	1F028	3	25171900	3446
A473	4	1E053	1	1E057	9	25171900	3446
A473	13	1E053	2	1F028	4	25171900	3446
A474	18	1E054	1	1B090	12	25171900	3446
A474	18	1E054	2	1B089	10	25171900	3446
A476	13	1E055	1	1C078	5	25171900	3446

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A476	13	1E055	2	1C080	5	25171900	3446
A476	14	1E055	3	1C082	5	25171900	3446
A477	12	1E056	1	1C078	4	25171900	3446
A477	13	1E056	2	1C080	4	25171900	3446
A477	14	1E056	3	1C082	4	25171900	3446
A477	15	1E056	4	1C084	5	25171900	3446
A477	15	1E056	5	1C086	5	25171900	3446
A481	7	1E072	1	1E060	8	25171900	3446
A481	8	1E072	2	1C079	10	25171900	3446
A481	9	1E072	3	1C081	10	25171900	3446
A482	7	1E073	1	1C077	10	25171900	3446
A482	6	1E073	2	1E062	8	25171900	3446
A482	5	1E073	3	1E066	8	25171900	3446
A483	7	1E074	1	1E060	7	25171900	3446
A483	6	1E074	2	1E062	7	25171900	3446
A483	5	1E074	3	1E066	7	25171900	3446
A484	7	1E075	1	1E061	8	25171900	3446
A484	7	1E075	2	1E063	8	25171900	3446
A484	6	1E075	3	1E065	8	25171900	3446
A485	8	1E076	1	1E060	6	25171900	3446
A485	7	1E076	2	1E063	7	25171900	3446
A485	6	1E076	3	1E065	7	25171900	3446
A486	8	1E077	1	1E061	7	25171900	3446
A486	8	1E077	2	1E062	6	25171900	3446
A486	6	1E077	3	1E065	6	25171900	3446
A487	9	1E078	1	1E060	5	25171900	3446
A487	8	1E078	2	1E062	5	25171900	3446
A487	7	1E078	3	1E065	5	25171900	3446
A488	7	1E079	1	1C077	9	25171900	3446
A488	7	1E079	2	1C079	9	25171900	3446
A488	7	1E079	3	1C081	9	25171900	3446
A489	8	1E080	1	1E067	12	25171900	3446
A489	7	1E080	2	1E068	12	25171900	3446
A489	7	1E080	3	1E069	12	25171900	3446
A490	7	1E081	1	1C083	10	25171900	3446
A490	7	1E081	2	1C085	10	25171900	3446
A490	8	1E081	3	1C087	10	25171900	3446
A491	8	1E082	1	1C083	4	25171900	3446
A491	7	1E082	2	1C085	9	25171900	3446
A491	8	1E082	3	1C087	9	25171900	3446
A492	7	1E083	1	1C083	9	25171900	3446
A492	8	1E083	2	1C085	4	25171900	3446
A492	8	1E083	3	1E069	11	25171900	3446
A493	9	1E084	1	1E067	6	25171900	3446
A493	9	1E084	2	1E068	6	25171900	3446
A493	8	1E084	3	1E069	10	25171900	3446
A494	9	1E085	1	1E067	11	25171900	3446
A494	9	1E085	2	1E068	11	25171900	3446
A494	8	1E085	3	1C087	4	25171900	3446
A495	9	1E086	1	1E067	5	25171900	3446
A495	9	1E086	2	1E068	10	25171900	3446
A495	8	1E086	3	1C087	3	25171900	3446
A496	10	1E087	1	1E067	10	25171900	3446
A496	10	1E087	2	1E068	5	25171900	3446
A496	9	1E087	3	1E069	6	25171900	3446
A497	10	1E088	1	1E067	4	25171900	3446
A497	10	1E088	2	1E068	4	25171900	3446
A497	9	1E088	3	1E069	5	25171900	3446
A498	10	1E089	1	1E067	3	25171900	3446
A498	10	1E089	2	1E068	9	25171900	3446
A498	10	1E089	3	1E069	9	25171900	3446
A499	11	1E090	1	1E067	9	25171900	3446

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A499	11	1E090	2	1E068	3	25171900	3446
A499	10	1E090	3	1E069	8	25171900	3446
A500	3	1F029	1	1F030	6	25171900	3446
A500	5	1F029	2	1GND		25171900	3446
A500	5	1F030	6	1F037	12	25171900	3446
A501	3	1F029	7	1F030	12	25171900	3446
A501	9	1F029	8	1F047	6	25171900	3446
A501	5	1F030	12	1F037	11	25171900	3446
A502	5	1F029	12	1F038	12	25171900	3446
A502	4	1F030	1	1F029	12	25171900	3446
A503	2	1F030	7	1F029	6	25171900	3446
A503	5	1F030	7	1F038	11	25171900	3446
A504	6	1F039	1	1F029	11	25171900	3446
A505	6	1F039	7	1F029	5	25171900	3446
A510	3	1F031	1	1F032	6	25171900	3446
A510	5	1F031	1	1F037	10	25171900	3446
A510	5	1F031	2	1GND		25171900	3446
A510	3	1F032	6	1F030	11	25171900	3446
A511	3	1F031	7	1F030	10	25171900	3446
A511	3	1F031	7	1F032	12	25171900	3446
A511	8	1F031	8	1F047	5	25171900	3446
A511	4	1F032	12	1F037	9	25171900	3446
A512	5	1F031	12	1F038	10	25171900	3446
A512	4	1F032	1	1F031	12	25171900	3446
A513	2	1F032	7	1F031	6	25171900	3446
A513	4	1F032	7	1F038	9	25171900	3446
A514	6	1F040	1	1F031	11	25171900	3446
A514	5	1F040	7	1F031	5	25171900	3446
A520	3	1F032	11	1F030	9	25171900	3446
A520	4	1F033	1	1F032	11	25171900	3446
A520	3	1F033	1	1F034	6	25171900	3446
A520	5	1F033	2	1GND		25171900	3446
A520	3	1F034	6	1F037	8	25171900	3446
A521	3	1F032	10	1F030	8	25171900	3446
A521	3	1F033	7	1F032	10	25171900	3446
A521	3	1F033	7	1F034	12	25171900	3446
A521	7	1F033	8	1F047	4	25171900	3446
A521	4	1F034	12	1F037	7	25171900	3446
A522	4	1F034	1	1F033	12	25171900	3446
A522	4	1F034	1	1F038	8	25171900	3446
A523	2	1F034	7	1F033	6	25171900	3446
A523	4	1F034	7	1F038	7	25171900	3446
A524	5	1F041	1	1F033	11	25171900	3446
A525	5	1F041	7	1F033	5	25171900	3446
A530	4	1F035	1	1F034	11	25171900	3446
A530	3	1F035	1	1F037	6	25171900	3446
A530	6	1F037	6	1F047	12	25171900	3446
A531	6	1F035	7	1F047	3	25171900	3446
A532	7	1F046	1	1F035	8	25171900	3446
A533	7	1F046	7	1F035	2	25171900	3446
A540	5	1F036	1	1F028	10	25171900	3446
A540	21	1F036	1	1H050	11	25171900	3446
A540	13	1H050	11	1E064	12	25171900	3446
A541	4	1F032	5	1F029	10	25171900	3446
A541	3	1F034	10	1F032	5	25171900	3446
A541	2	1F035	12	1F034	10	25171900	3446
A541	3	1F036	7	1F035	12	25171900	3446
A550	6	1F037	1	1F026	10	25171900	3446
A550	6	1F037	2	1F028	11	25171900	3446
A550	3	1F037	3	1F036	6	25171900	3446
A551	7	1F038	1	1F026	9	25171900	3446
A551	7	1F038	2	1F028	2	25171900	3446

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A552	7	1F047	1	1F036	11	25171900	3446
A552	5	1F047	2	1GND		25171900	3446
A553	8	1F035	3	1D028	4	25171900	3446
A553	8	1F035	4	1D027	12	25171900	3446
A553	8	1F035	5	1D027	8	25171900	3446
A553	9	1F035	6	1D027	4	25171900	3446
A553	5	1F042	12	1F035	6	25171900	3446
A553	5	1F043	6	1F035	5	25171900	3446
A553	5	1F043	12	1F035	4	25171900	3446
A553	5	1F044	6	1F035	3	25171900	3446
A553	5	1F048	1	1F042	12	25171900	3446
A553	4	1F048	2	1F043	6	25171900	3446
A553	4	1F048	3	1F043	12	25171900	3446
A553	3	1F048	4	1F044	6	25171900	3446
A554	9	1F035	11	1D029	8	25171900	3446
A554	5	1F042	6	1F035	11	25171900	3446
A554	11	1F044	12	1D028	8	25171900	3446
A554	10	1F045	6	1D028	12	25171900	3446
A554	12	1F045	12	1D029	4	25171900	3446
A554	3	1F046	6	1F044	12	25171900	3446
A554	3	1F048	7	1F046	6	25171900	3446
A554	3	1F048	8	1F045	6	25171900	3446
A554	3	1F048	9	1F045	12	25171900	3446
A554	5	1F048	10	1F042	6	25171900	3446
A555	9	1F035	9	1D030	4	25171900	3446
A555	8	1F035	10	1D029	12	25171900	3446
A555	5	1F042	11	1F035	10	25171900	3446
A555	5	1F043	5	1F035	9	25171900	3446
A555	10	1F043	11	1D030	8	25171900	3446
A555	9	1F044	5	1D030	12	25171900	3446
A555	3	1F046	11	1F044	5	25171900	3446
A555	3	1F046	12	1F043	11	25171900	3446
A555	5	1F049	1	1F042	11	25171900	3446
A555	4	1F049	2	1F043	5	25171900	3446
A555	4	1F049	3	1F046	12	25171900	3446
A555	4	1F049	4	1F046	11	25171900	3446
A556	2	1F048	6	1F049	6	25171900	3446
A556	3	1F048	12	1F048	6	25171900	3446
A556	11	1F049	7	1F026	4	25171900	3446
A556	6	1F049	8	1E057	5	25171900	3446
A556	3	1F049	9	1F048	12	25171900	3446
A556	8	1F049	10	1F036	3	25171900	3446
A560	4	1F042	1	1F039	12	25171900	3446
A560	4	1F042	2	1F040	12	25171900	3446
A560	3	1F042	3	1F041	12	25171900	3446
A561	3	1F042	7	1F039	6	25171900	3446
A561	3	1F042	8	1F040	11	25171900	3446
A561	3	1F042	9	1F041	11	25171900	3446
A562	4	1F043	1	1F039	11	25171900	3446
A562	3	1F043	2	1F040	6	25171900	3446
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A563	3	1F043	7	1F039	5	25171900	3446
A563	3	1F043	8	1F040	5	25171900	3446
A563	3	1F043	9	1F041	9	25171900	3446
A564	4	1F044	1	1F039	10	25171900	3446
A564	4	1F044	2	1F040	10	25171900	3446
A564	3	1F044	3	1F041	6	25171900	3446
A565	4	1F044	7	1F039	4	25171900	3446
A565	4	1F044	8	1F040	9	25171900	3446
A565	3	1F044	9	1F041	5	25171900	3446
A566	5	1F045	1	1F039	9	25171900	3446
A566	4	1F045	2	1F040	4	25171900	3446

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A566	3	1F045	3	1F041	4	25171900	3446
A567	4	1F045	7	1F039	3	25171900	3446
A567	4	1F045	8	1F040	3	25171900	3446
A567	4	1F045	9	1F041	3	25171900	3446
A570	9	1F047	7	1F030	4	25171900	3446
A570	8	1F047	8	1F032	4	25171900	3446
A600	13	1B076	1	1E081	12	25171900	3446
A600	13	1B076	2	1E081	11	25171900	3446
A600	12	1B076	3	1E081	10	25171900	3446
A600	12	1B076	4	1E081	9	25171900	3446
A600	11	1E072	12	1D051	6	25171900	3446
A600	11	1E073	12	1D051	12	25171900	3446
A600	12	1E074	12	1D052	6	25171900	3446
A600	12	1E075	12	1D052	12	25171900	3446
A600	5	1E081	9	1E075	12	25171900	3446
A600	5	1E081	10	1E074	12	25171900	3446
A600	5	1E081	11	1E073	12	25171900	3446
A600	5	1E081	12	1E072	12	25171900	3446
A601	11	1B076	7	1E081	8	25171900	3446
A601	11	1B076	8	1E081	7	25171900	3446
A601	11	1B076	9	1E081	6	25171900	3446
A601	12	1B076	10	1E082	12	25171900	3446
A601	12	1E076	12	1D053	6	25171900	3446
A601	12	1E077	12	1D053	12	25171900	3446
A601	12	1E078	12	1D054	6	25171900	3446
A601	12	1E079	12	1D054	12	25171900	3446
A601	3	1E081	6	1E078	12	25171900	3446
A601	4	1E081	7	1E077	12	25171900	3446
A601	4	1E081	8	1E076	12	25171900	3446
A601	3	1E082	12	1E079	12	25171900	3446
A602	13	1B077	1	1E082	11	25171900	3446
A602	13	1B077	2	1E082	10	25171900	3446
A602	12	1B077	3	1E082	9	25171900	3446
A602	12	1B077	4	1E082	8	25171900	3446
A602	10	1E072	11	1D055	6	25171900	3446
A602	10	1E073	11	1D055	12	25171900	3446
A602	10	1E074	11	1D056	6	25171900	3446
A602	10	1E075	11	1D056	12	25171900	3446
A602	5	1E082	8	1E075	11	25171900	3446
A602	5	1E082	9	1E074	11	25171900	3446
A602	6	1E082	10	1E073	11	25171900	3446
A602	6	1E082	11	1E072	11	25171900	3446
A603	11	1B077	7	1E082	7	25171900	3446
A603	11	1B077	8	1E082	6	25171900	3446
A603	11	1B077	9	1E082	5	25171900	3446
A603	12	1B077	10	1E083	12	25171900	3446
A603	10	1E076	11	1D057	6	25171900	3446
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A603	11	1E078	11	1D058	6	25171900	3446
A603	11	1E079	11	1D058	12	25171900	3446
A603	4	1E082	5	1E078	11	25171900	3446
A603	4	1E082	6	1E077	11	25171900	3446
A603	4	1E082	7	1E076	11	25171900	3446
A603	3	1E083	12	1E079	11	25171900	3446
A604	13	1B078	1	1E083	11	25171900	3446
A604	12	1B078	2	1E083	10	25171900	3446
A604	12	1B078	3	1E083	9	25171900	3446
A604	12	1B078	4	1E083	8	25171900	3446
A604	8	1E072	10	1D059	6	25171900	3446
A604	8	1E073	10	1D059	12	25171900	3446
A604	9	1E074	10	1D060	6	25171900	3446
A604	9	1E075	10	1D060	12	25171900	3446

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A604	5	1E083	8	1E075	10	25171900	3446
A604	6	1E083	9	1E074	10	25171900	3446
A604	6	1E083	10	1E073	10	25171900	3446
A604	6	1E083	11	1E072	10	25171900	3446
A605	11	1B078	7	1E083	7	25171900	3446
A605	11	1B078	8	1E083	6	25171900	3446
A605	11	1B078	9	1E083	5	25171900	3446
A605	12	1B078	10	1E084	12	25171900	3446
A605	9	1E076	10	1D061	6	25171900	3446
A605	9	1E077	10	1D061	12	25171900	3446
A605	9	1E078	10	1D062	6	25171900	3446
A605	9	1E079	10	1D062	12	25171900	3446
A605	4	1E083	5	1E078	10	25171900	3446
A605	5	1E083	6	1E077	10	25171900	3446
A605	5	1E083	7	1E076	10	25171900	3446
A605	4	1E084	12	1E079	10	25171900	3446
A606	13	1B079	1	1E084	11	25171900	3446
A606	13	1B079	2	1E084	10	25171900	3446
A606	12	1B079	3	1E084	9	25171900	3446
A606	12	1B079	4	1E084	8	25171900	3446
A606	7	1E072	9	1D063	6	25171900	3446
A606	7	1E073	9	1D063	12	25171900	3446
A606	7	1E074	9	1D064	6	25171900	3446
A606	7	1E075	9	1D064	12	25171900	3446
A606	6	1E084	8	1E075	9	25171900	3446
A606	6	1E084	9	1E074	9	25171900	3446
A606	6	1E084	10	1E073	9	25171900	3446
A606	6	1E084	11	1E072	9	25171900	3446
A607	11	1B079	7	1E084	7	25171900	3446
A607	11	1B079	8	1E084	6	25171900	3446
A607	11	1B079	9	1E084	5	25171900	3446
A607	12	1B079	10	1E085	12	25171900	3446
A607	7	1E076	9	1D065	6	25171900	3446
A607	7	1E077	9	1D065	12	25171900	3446
A607	8	1E078	9	1D066	6	25171900	3446
A607	7	1E079	9	1D066	12	25171900	3446
A607	5	1E084	5	1E078	9	25171900	3446
A607	5	1E084	6	1E077	9	25171900	3446
A607	5	1E084	7	1E076	9	25171900	3446
A607	4	1E085	12	1E079	9	25171900	3446
A608	10	1B080	1	1D067	6	25171900	3446
A608	11	1B080	2	1D067	12	25171900	3446
A608	10	1B080	3	1D068	6	25171900	3446
A608	11	1B080	4	1D068	12	25171900	3446
A608	6	1D067	6	1E072	8	25171900	3446
A608	5	1D067	12	1E073	8	25171900	3446
A608	6	1D068	6	1E074	8	25171900	3446
A608	6	1D068	12	1E075	8	25171900	3446
A608	7	1E072	8	1E085	11	25171900	3446
A608	6	1E073	8	1E085	10	25171900	3446
A608	6	1E074	8	1E085	9	25171900	3446
A608	6	1E075	8	1E085	8	25171900	3446
A609	9	1B080	7	1D069	6	25171900	3446
A609	10	1B080	8	1D069	12	25171900	3446
A609	9	1B080	9	1D070	6	25171900	3446
A609	10	1B080	10	1D070	12	25171900	3446
A609	6	1D069	6	1E076	8	25171900	3446
A609	6	1D069	12	1E077	8	25171900	3446
A609	7	1D070	6	1E078	8	25171900	3446
A609	7	1D070	12	1E079	8	25171900	3446
A609	5	1E076	8	1E085	7	25171900	3446
A609	5	1E077	8	1E085	6	25171900	3446

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A609	5	1E078	8	1E085	5	25171900	3446
A609	5	1E079	8	1E086	12	25171900	3446
A610	10	1B081	1	1D071	6	25171900	3446
A610	10	1B081	2	1D071	12	25171900	3446
A610	9	1B081	3	1D072	6	25171900	3446
A610	10	1B081	4	1D072	12	25171900	3446
A610	6	1D071	6	1E072	7	25171900	3446
A610	5	1D071	12	1E073	7	25171900	3446
A610	6	1D072	6	1E074	7	25171900	3446
A610	5	1D072	12	1E075	7	25171900	3446
A610	7	1E072	7	1E086	11	25171900	3446
A610	7	1E073	7	1E086	10	25171900	3446
A610	6	1E074	7	1E086	9	25171900	3446
A610	6	1E075	7	1E086	8	25171900	3446
A611	9	1B081	7	1D073	6	25171900	3446
A611	9	1B081	8	1D073	12	25171900	3446
A611	8	1B081	9	1D074	6	25171900	3446
A611	9	1B081	10	1D074	12	25171900	3446
A611	6	1D073	6	1E076	7	25171900	3446
A611	5	1D073	12	1E077	7	25171900	3446
A611	6	1D074	6	1E078	7	25171900	3446
A611	5	1D074	12	1E079	7	25171900	3446
A611	6	1E076	7	1E086	7	25171900	3446
A611	5	1E077	7	1E086	6	25171900	3446
A611	5	1E078	7	1E086	5	25171900	3446
A611	5	1E079	7	1E087	12	25171900	3446
A612	10	1B082	1	1D075	6	25171900	3446
A612	10	1B082	2	1D075	12	25171900	3446
A612	9	1B082	3	1D076	6	25171900	3446
A612	10	1B082	4	1D076	12	25171900	3446
A612	6	1D075	6	1E072	6	25171900	3446
A612	5	1D075	12	1E073	6	25171900	3446
A612	5	1D076	6	1E074	6	25171900	3446
A612	5	1D076	12	1E075	6	25171900	3446
A612	8	1E072	6	1E087	11	25171900	3446
A612	7	1E073	6	1E087	10	25171900	3446
A612	7	1E074	6	1E087	9	25171900	3446
A612	6	1E075	6	1E087	8	25171900	3446
A613	9	1B082	7	1D077	6	25171900	3446
A613	9	1B082	8	1D077	12	25171900	3446
A613	8	1B082	9	1D078	6	25171900	3446
A613	9	1B082	10	1D078	12	25171900	3446
A613	5	1D077	6	1E076	6	25171900	3446
A613	4	1D077	12	1E077	6	25171900	3446
A613	5	1D078	6	1E078	6	25171900	3446
A613	5	1D078	12	1E079	6	25171900	3446
A613	6	1E076	6	1E087	7	25171900	3446
A613	5	1E077	6	1E087	6	25171900	3446
A613	5	1E078	6	1E087	5	25171900	3446
A613	5	1E079	6	1E088	12	25171900	3446
A614	9	1B086	1	1D079	6	25171900	3446
A614	10	1B086	2	1D079	12	25171900	3446
A614	9	1B086	3	1D080	6	25171900	3446
A614	10	1B086	4	1D080	12	25171900	3446
A614	6	1D079	6	1E072	5	25171900	3446
A614	6	1D079	12	1E073	5	25171900	3446
A614	6	1D080	6	1E074	5	25171900	3446
A614	5	1D080	12	1E075	5	25171900	3446
A614	8	1E072	5	1E088	11	25171900	3446
A614	8	1E073	5	1E088	10	25171900	3446
A614	7	1E074	5	1E088	9	25171900	3446
A614	7	1E075	5	1E088	8	25171900	3446

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A615	9	1B086	7	1D081	6	25171900	3446
A615	9	1B086	8	1D081	12	25171900	3446
A615	8	1B086	9	1D082	6	25171900	3446
A615	9	1B086	10	1D082	12	25171900	3446
A615	6	1D081	6	1E080	12	25171900	3446
A615	5	1D081	12	1E080	11	25171900	3446
A615	6	1D082	6	1E080	10	25171900	3446
A615	5	1D082	12	1E080	9	25171900	3446
A615	10	1E080	9	1E059	12	25171900	3446
A615	10	1E080	10	1E059	6	25171900	3446
A615	11	1E080	11	1E058	12	25171900	3446
A615	11	1E080	12	1E058	6	25171900	3446
A616	9	1B087	1	1D083	6	25171900	3446
A616	10	1B087	2	1D083	12	25171900	3446
A616	9	1B087	3	1D084	6	25171900	3446
A616	9	1B087	4	1D084	12	25171900	3446
A616	6	1D083	6	1E080	8	25171900	3446
A616	5	1D083	12	1E080	7	25171900	3446
A616	6	1D084	6	1E080	6	25171900	3446
A616	5	1D084	12	1E089	5	25171900	3446
A616	6	1E080	6	1E071	6	25171900	3446
A616	6	1E080	7	1E070	12	25171900	3446
A616	6	1E080	8	1E070	5	25171900	3446
A616	9	1E089	5	1E071	12	25171900	3446
A617	8	1B087	7	1D085	6	25171900	3446
A617	9	1B087	8	1D085	12	25171900	3446
A617	8	1B087	9	1D086	6	25171900	3446
A617	9	1B087	10	1D086	12	25171900	3446
A617	6	1D085	6	1E089	12	25171900	3446
A617	5	1D085	12	1E089	11	25171900	3446
A617	6	1D086	6	1E089	10	25171900	3446
A617	5	1D086	12	1E089	9	25171900	3446
A617	14	1E089	9	1E059	11	25171900	3446
A617	14	1E089	10	1E059	5	25171900	3446
A617	14	1E089	11	1E058	11	25171900	3446
A617	14	1E089	12	1E058	5	25171900	3446
A618	9	1B088	1	1D087	6	25171900	3446
A618	10	1B088	2	1D087	12	25171900	3446
A618	8	1B088	3	1D088	6	25171900	3446
A618	9	1B088	4	1D088	12	25171900	3446
A618	5	1D087	6	1E089	8	25171900	3446
A618	4	1D087	12	1E089	7	25171900	3446
A618	5	1D088	6	1E089	6	25171900	3446
A618	4	1D088	12	1E090	7	25171900	3446
A618	9	1E089	6	1E071	5	25171900	3446
A618	10	1E089	7	1E070	11	25171900	3446
A618	10	1E089	8	1E070	4	25171900	3446
A618	10	1E090	7	1E071	11	25171900	3446
A619	8	1B088	7	1D089	6	25171900	3446
A619	9	1B088	8	1D089	12	25171900	3446
A619	8	1B088	9	1D090	6	25171900	3446
A619	8	1B088	10	1D090	12	25171900	3446
A619	6	1D089	6	1E090	12	25171900	3446
A619	5	1D089	12	1E090	11	25171900	3446
A619	6	1D090	6	1E090	10	25171900	3446
A619	5	1D090	12	1E090	9	25171900	3446
A619	14	1E090	9	1E059	10	25171900	3446
A619	14	1E090	10	1E059	4	25171900	3446
A619	15	1E090	11	1E058	10	25171900	3446
A619	15	1E090	12	1E058	4	25171900	3446
A620	3	1B076	6	1B076	12	25171900	3446
A620	2	1B076	12	1B077	12	25171900	3446

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A620	2	1B077	6	1B076	6	25171900	3446
A620	2	1B078	6	1B077	6	25171900	3446
A620	7	1B083	1	1C089	11	25171900	3446
A620	4	1B083	2	1B078	6	25171900	3446
A621	3	1B078	12	1B079	6	25171900	3446
A621	2	1B079	6	1B080	6	25171900	3446
A621	2	1B079	12	1B078	12	25171900	3446
A621	2	1B080	12	1B079	12	25171900	3446
A621	6	1B083	7	1C089	10	25171900	3446
A621	3	1B083	8	1B080	12	25171900	3446
A622	3	1B081	6	1B081	12	25171900	3446
A622	2	1B081	12	1B082	12	25171900	3446
A622	2	1B082	6	1B081	6	25171900	3446
A622	7	1B084	1	1C089	9	25171900	3446
A622	3	1B084	2	1B082	6	25171900	3446
A622	3	1B084	2	1B086	6	25171900	3446
A623	6	1B084	7	1C089	6	25171900	3446
A623	3	1B084	8	1B086	12	25171900	3446
A623	2	1B086	12	1B087	12	25171900	3446
A623	2	1B087	12	1B088	12	25171900	3446
A623	2	1B088	6	1B087	6	25171900	3446
A623	3	1B088	12	1B088	6	25171900	3446
A630	3	1B085	1	1B083	6	25171900	3446
A630	4	1B085	2	1B083	12	25171900	3446
A630	3	1B085	3	1B084	6	25171900	3446
A630	3	1B085	4	1B084	12	25171900	3446
A631	2	1B085	7	1B085	6	25171900	3446
A631	28	1B085	8	1F026	3	25171900	3446
A631	28	1B085	9	1F027	8	25171900	3446
A631	4	1B085	10	1B089	4	25171900	3446
A700	3	1I059	1	1I060	6	25171900	3446
A700	5	1I059	2	1GND		25171900	3446
A700	5	1I059	3	1GND		25171900	3446
A701	12	1H034	6	1J014	5	25171900	3446
A701	9	1H052	12	1H034	6	25171900	3446
A701	11	1I052	12	1I029	12	25171900	3446
A701	5	1I059	7	1H052	12	25171900	3446
A701	5	1I059	8	1GND		25171900	3446
A701	5	1I059	8	1I052	12	25171900	3446
A701	14	1I059	9	1J087	12	25171900	3446
A702	4	1I060	1	1H061	6	25171900	3446
A702	4	1I060	2	1H062	12	25171900	3446
A702	3	1I060	3	1I061	6	25171900	3446
A702	5	1I060	4	1GND		25171900	3446
A702	2	1I061	6	1I062	6	25171900	3446
A702	2	1I061	12	1I060	12	25171900	3446
A702	3	1I062	6	1I062	12	25171900	3446
A702	2	1I062	12	1I061	12	25171900	3446
A703	4	1G017	5	1F014	12	25171900	3446
A703	6	1G017	10	1F014	6	25171900	3446
A703	4	1G018	5	1F015	12	25171900	3446
A703	6	1G018	10	1F015	6	25171900	3446
A703	20	1I060	7	1G017	5	25171900	3446
A703	20	1I060	8	1G017	10	25171900	3446
A703	20	1I060	9	1G018	5	25171900	3446
A703	20	1I060	10	1G018	10	25171900	3446
A704	4	1G019	5	1F016	12	25171900	3446
A704	6	1G019	10	1F016	6	25171900	3446
A704	4	1G020	5	1F017	12	25171900	3446
A704	6	1G020	10	1F017	6	25171900	3446
A704	20	1I061	1	1G019	5	25171900	3446
A704	19	1I061	2	1G019	10	25171900	3446

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A704	19	11061	3	1G020	5	25171900	3446
A704	19	11061	4	1G020	10	25171900	3446
A705	4	1G021	5	1F018	12	25171900	3446
A705	6	1G021	10	1F018	6	25171900	3446
A705	4	1G022	5	1F019	12	25171900	3446
A705	6	1G022	10	1F019	6	25171900	3446
A705	19	11061	7	1G021	5	25171900	3446
A705	19	11061	8	1G021	10	25171900	3446
A705	19	11061	9	1G022	5	25171900	3446
A705	19	11061	10	1G022	10	25171900	3446
A706	4	1G023	5	1F020	12	25171900	3446
A706	6	1G023	10	1F020	6	25171900	3446
A706	4	1G024	5	1F021	12	25171900	3446
A706	6	1G024	10	1F021	6	25171900	3446
A706	18	11062	1	1G023	5	25171900	3446
A706	18	11062	2	1G023	10	25171900	3446
A706	18	11062	3	1G024	5	25171900	3446
A706	18	11062	4	1G024	10	25171900	3446
A707	4	1G025	5	1F022	12	25171900	3446
A707	6	1G025	10	1F022	6	25171900	3446
A707	8	1G038	5	1F023	12	25171900	3446
A707	9	1G038	11	1F023	6	25171900	3446
A707	18	11062	7	1G025	5	25171900	3446
A707	18	11062	8	1G025	10	25171900	3446
A707	14	11062	9	1G038	5	25171900	3446
A707	13	11062	10	1G038	11	25171900	3446
A740	13	1H036	12	1H008	12	25171900	3446
A740	3	1H037	6	1H036	12	25171900	3446
A740	5	1H063	1	1GND		25171900	3446
A740	6	1H063	1	11065	6	25171900	3446
A740	5	1H063	2	11065	5	25171900	3446
A740	13	11036	12	11008	10	25171900	3446
A740	3	11037	6	11036	12	25171900	3446
A740	13	11065	5	1H037	6	25171900	3446
A740	13	11065	6	11037	6	25171900	3446
A750	3	1F072	6	1F074	12	25171900	3446
A750	10	1H058	1	1F072	6	25171900	3446
A751	3	1H058	7	1H059	12	25171900	3446
A752	5	1H060	1	1G063	5	25171900	3446
A752	3	1H060	1	1H059	6	25171900	3446
A752	4	1H060	2	1H059	11	25171900	3446
A753	2	1H060	7	1H060	6	25171900	3446
A753	3	1H060	8	1H063	12	25171900	3446
A754	5	1H059	1	1G063	6	25171900	3446
A754	4	1H059	1	1H058	11	25171900	3446
A755	6	1H059	7	1G062	6	25171900	3446
A755	2	1H059	7	1H058	6	25171900	3446
A760	3	1B090	11	1B089	5	25171900	3446
A760	22	1H061	1	1B090	11	25171900	3446
A760	14	1H061	1	1J037	12	25171900	3446
A760	2	1J037	12	1J035	12	25171900	3446
A761	3	1H061	7	1H062	11	25171900	3446
A761	20	1H062	11	1J018	6	25171900	3446
A762	12	1H062	1	1E050	6	25171900	3446
A762	4	1H062	1	1H061	12	25171900	3446
A763	20	1H061	5	1J019	6	25171900	3446
A763	2	1H062	7	1H061	5	25171900	3446
A764	20	1H061	4	1J018	5	25171900	3446
A764	3	1H063	7	1H061	4	25171900	3446
A764	3	1H063	8	1H061	11	25171900	3446
A765	4	11058	1	1H063	11	25171900	3446
A766	3	1H062	10	1H061	3	25171900	3446

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A766	5	1I058	7	1H062	10	25171900	3446
A767	5	1I048	8	1GND		25171900	3446
A767	6	1I048	7	1I059	5	25171900	3446
A768	10	1I064	12	1I045	7	25171900	3446
A768	3	1I065	1	1I064	6	25171900	3446
A768	4	1I065	2	1I064	12	25171900	3446
A768	5	1I065	2	1GND		25171900	3446
A768	10	1I065	1	1H045	7	25171900	3446
A769	16	1I065	8	1E048	12	25171900	3446
A769	20	1I065	7	1J021	6	25171900	3446
A770	5	1E049	9	1GND		25171900	3446
A770	16	1E049	7	1E015	12	25171900	3446
A770	18	1E049	8	1F088	6	25171900	3446
A770	32	1F088	6	1J021	3	25171900	3446
A771	24	1J087	9	1E049	12	25171900	3446
R010	10	1D040	2	1E022	6	25171900	3446
R010	11	1D040	1	1E021	6	25171900	3446
R011	8	1D041	1	1E028	6	25171900	3446
R011	10	1D041	2	1E022	5	25171900	3446
R012	8	1D042	2	1E029	6	25171900	3446
R012	11	1D042	1	1E021	5	25171900	3446
R013	8	1D043	2	1E029	5	25171900	3446
R013	9	1D043	1	1E028	5	25171900	3446
R016	9	1D046	1	1E032	6	25171900	3446
R016	2	1E029	4	1E028	4	25171900	3446
R016	3	1E030	12	1E029	4	25171900	3446
R016	3	1E032	6	1E030	12	25171900	3446
R017	8	1D047	1	1E034	6	25171900	3446
R017	2	1E034	6	1E033	6	25171900	3446
R019	16	1E019	1	1H040	12	25171900	3446
R011	15	1E020	1	1H040	6	25171900	3446
R020	11	1E019	12	1H010	6	25171900	3446
R020	11	1E020	12	1H013	6	25171900	3446
R020	4	1E021	1	1E019	12	25171900	3446
R020	4	1E021	2	1E020	12	25171900	3446
R021	12	1E019	11	1H010	12	25171900	3446
R021	12	1E020	11	1H013	12	25171900	3446
R021	4	1E022	1	1E019	11	25171900	3446
R021	4	1E022	2	1E020	11	25171900	3446
R022	11	1E019	10	1H011	6	25171900	3446
R022	11	1E020	10	1H014	6	25171900	3446
R022	4	1E023	1	1E019	10	25171900	3446
R022	4	1E023	2	1E020	10	25171900	3446
R023	12	1E019	9	1H011	12	25171900	3446
R023	12	1E020	9	1H014	12	25171900	3446
R023	4	1E024	1	1E019	9	25171900	3446
R023	4	1E024	2	1E020	9	25171900	3446
R024	11	1E019	8	1H012	6	25171900	3446
R024	11	1E020	8	1H015	6	25171900	3446
R024	5	1E026	1	1E019	8	25171900	3446
R024	5	1E026	2	1E020	8	25171900	3446
R025	12	1E019	7	1H012	12	25171900	3446
R025	12	1E020	7	1H015	12	25171900	3446
R025	5	1E027	1	1E019	7	25171900	3446
R025	5	1E027	2	1E020	7	25171900	3446
R026	5	1E028	1	1E021	4	25171900	3446
R021	5	1E029	1	1E022	4	25171900	3446
R032	13	1E019	6	1H002	6	25171900	3446
R032	13	1E020	6	1H005	6	25171900	3446
R032	6	1E030	1	1E019	6	25171900	3446
R032	6	1E030	2	1E020	6	25171900	3446
R033	5	1E032	1	1E024	12	25171900	3446

R034	5	1E033	1	1E026	6	25171900	3446
R035	5	1E034	1	1E027	6	25171900	3446
R042	4	1D044	1	1D044	12	25171900	3446
R043	8	1D045	1	1E032	2	25171900	3446
R052	11	1D044	7	1E023	3	25171900	3446
R090	13	1E047	1	1H037	12	25171900	3446
R090	4	1H037	12	1H033	8	25171900	3446
R091	6	1E037	1	1E047	6	25171900	3446
R091	15	1E037	2	1G011	10	25171900	3446
R092	5	1E038	1	1E047	5	25171900	3446
R092	15	1E038	2	1G011	9	25171900	3446
R093	5	1E039	1	1E047	4	25171900	3446
R093	15	1E039	2	1G012	11	25171900	3446
R094	5	1E040	1	1E047	3	25171900	3446
R094	15	1E040	2	1G012	10	25171900	3446
R095	4	1E041	1	1E047	2	25171900	3446
R095	15	1E041	2	1G012	9	25171900	3446
R100	11	1D040	7	1E021	11	25171900	3446
R100	10	1D040	8	1E022	11	25171900	3446
R101	8	1D041	7	1E028	12	25171900	3446
R101	10	1D041	8	1E022	10	25171900	3446
R102	14	1D048	1	1E021	10	25171900	3446
R102	11	1D048	2	1E029	12	25171900	3446
R103	9	1D043	7	1E028	11	25171900	3446
R103	9	1D043	8	1E029	11	25171900	3446
R106	9	1D046	7	1E032	12	25171900	3446
R106	2	1E029	10	1E028	10	25171900	3446
R106	3	1E031	12	1E029	10	25171900	3446
R106	2	1E032	12	1E031	12	25171900	3446
R107	8	1D047	7	1E034	12	25171900	3446
R107	2	1E034	12	1E033	12	25171900	3446
R110	16	1E035	1	1I040	12	25171900	3446
R110	15	1E036	1	1I040	6	25171900	3446
R120	8	1E021	7	1E035	12	25171900	3446
R120	15	1E021	7	1I010	6	25171900	3446
R120	8	1E021	8	1E036	12	25171900	3446
R120	14	1E021	8	1I013	6	25171900	3446
R121	7	1E022	7	1E035	11	25171900	3446
R121	16	1E022	7	1I010	12	25171900	3446
R121	7	1E022	8	1E036	11	25171900	3446
R121	15	1E022	8	1I013	12	25171900	3446
R122	7	1E023	7	1E035	10	25171900	3446
R122	15	1E023	7	1I011	6	25171900	3446
R122	7	1E023	8	1E036	10	25171900	3446
R122	14	1E023	8	1I014	6	25171900	3446
R123	6	1E025	1	1E035	9	25171900	3446
R123	17	1E025	1	1I011	12	25171900	3446
R123	6	1E025	2	1E036	9	25171900	3446
R123	16	1E025	2	1I014	12	25171900	3446
R124	5	1E026	7	1E035	8	25171900	3446
R124	15	1E026	7	1I012	6	25171900	3446
R124	6	1E026	8	1E036	8	25171900	3446
R124	15	1E026	8	1I015	6	25171900	3446
R125	5	1E027	7	1E035	7	25171900	3446
R125	16	1E027	7	1I012	12	25171900	3446
R125	5	1E027	8	1E036	7	25171900	3446
R125	16	1E027	8	1I015	12	25171900	3446
R130	5	1E028	7	1E021	12	25171900	3446
R131	5	1E029	7	1E022	12	25171900	3446
R132	4	1E031	1	1E035	6	25171900	3446
R132	19	1E031	1	1I002	6	25171900	3446
R132	4	1E031	2	1E036	6	25171900	3446

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R132	18	1E031	2	1I005	6	25171900	3446
B133	5	1E032	7	1E025	12	25171900	3446
B134	5	1E033	7	1E026	12	25171900	3446
B135	5	1E034	7	1E027	12	25171900	3446
B142	4	1D049	1	1D049	12	25171900	3446
B143	8	1D045	7	1E032	8	25171900	3446
B152	13	1D049	7	1E023	9	25171900	3446
B190	16	1E047	7	1I037	12	25171900	3446
B190	4	1I037	12	1I033	8	25171900	3446
B191	4	1E042	1	1E047	12	25171900	3446
B191	17	1E042	2	1G011	12	25171900	3446
B192	4	1E043	1	1E047	11	25171900	3446
B192	17	1E043	2	1G011	11	25171900	3446
B193	4	1E044	1	1E047	10	25171900	3446
B193	17	1E044	2	1G012	12	25171900	3446
B194	17	1E045	1	1G012	8	25171900	3446
B194	3	1E045	2	1E047	9	25171900	3446
B195	20	1E046	1	1G004	12	25171900	3446
B195	3	1E046	2	1E047	8	25171900	3446
B200	6	1D031	1	1D041	6	25171900	3446
B200	7	1D031	1	1E030	11	25171900	3446
B200	7	1D031	2	1E037	12	25171900	3446
B200	6	1D031	3	1D041	12	25171900	3446
B200	6	1D031	3	1E031	11	25171900	3446
B200	8	1D031	4	1E042	12	25171900	3446
B200	5	1D031	4	1GND		25171900	3446
B200	6	1D041	6	1E039	12	25171900	3446
B200	5	1D041	12	1E044	12	25171900	3446
B200	5	1E030	11	1E024	11	25171900	3446
B200	4	1E031	11	1E025	11	25171900	3446
B200	13	1E037	12	1H017	6	25171900	3446
B200	17	1E042	12	1I017	6	25171900	3446
B200	5	1E044	12	1GND		25171900	3446
B201	5	1D032	1	1D040	6	25171900	3446
B201	6	1D032	1	1E030	10	25171900	3446
B201	7	1D032	2	1E037	11	25171900	3446
B201	7	1D032	3	1E024	9	25171900	3446
B201	7	1D032	3	1E039	10	25171900	3446
B201	6	1D032	4	1E039	5	25171900	3446
B201	6	1D040	6	1E039	11	25171900	3446
B201	3	1D043	4	1D044	8	25171900	3446
B201	2	1D044	8	1D045	6	25171900	3446
B201	4	1E030	10	1E024	10	25171900	3446
B201	14	1E037	11	1H017	12	25171900	3446
B201	5	1E039	5	1D043	4	25171900	3446
B201	6	1E039	10	1D044	5	25171900	3446
B202	5	1D032	7	1D040	12	25171900	3446
B202	6	1D032	7	1E031	10	25171900	3446
B202	7	1D032	8	1E042	11	25171900	3446
B202	5	1D032	8	1GND		25171900	3446
B202	6	1D032	9	1E025	9	25171900	3446
B202	8	1D032	9	1E044	10	25171900	3446
B202	6	1D032	10	1D043	10	25171900	3446
B202	5	1D032	10	1GND		25171900	3446
B202	5	1D040	12	1E044	11	25171900	3446
B202	3	1D043	10	1D045	12	25171900	3446
B202	4	1D045	12	1E044	5	25171900	3446
B202	5	1D049	5	1GND		25171900	3446
B202	5	1E031	10	1E025	10	25171900	3446
B202	18	1E042	11	1I017	12	25171900	3446
B202	5	1E044	5	1D049	8	25171900	3446
B202	6	1E044	10	1D049	5	25171900	3446

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R202	5	1E044	11	1GND		25171900	3446
R203	6	1D031	7	1E023	6	25171900	3446
R203	7	1D031	7	1E039	9	25171900	3446
R203	6	1D031	8	1E037	10	25171900	3446
R203	7	1D031	9	1D043	12	25171900	3446
R203	7	1D031	9	1E023	12	25171900	3446
R203	7	1D031	10	1E042	10	25171900	3446
R203	5	1D031	10	1GND		25171900	3446
R203	4	1D043	12	1E044	9	25171900	3446
R203	5	1E023	12	1GND		25171900	3446
R203	13	1E037	10	1H018	6	25171900	3446
R203	6	1E039	9	1D043	6	25171900	3446
R203	17	1E042	10	1I018	6	25171900	3446
R204	7	1D033	1	1E023	5	25171900	3446
R204	7	1D033	1	1E039	8	25171900	3446
R204	7	1D033	2	1E037	9	25171900	3446
R204	8	1D033	3	1E023	11	25171900	3446
R204	8	1D033	3	1E044	8	25171900	3446
R204	7	1D033	4	1E042	9	25171900	3446
R204	5	1D033	4	1GND		25171900	3446
R204	5	1D048	12	1GND		25171900	3446
R204	14	1E037	9	1H018	12	25171900	3446
R204	5	1E039	8	1D042	12	25171900	3446
R204	18	1E042	9	1I018	12	25171900	3446
R204	5	1E044	8	1D048	12	25171900	3446
R205	7	1D033	7	1E023	4	25171900	3446
R205	6	1D033	7	1E039	7	25171900	3446
R205	5	1D033	8	1E037	8	25171900	3446
R205	5	1D033	9	1D041	11	25171900	3446
R205	7	1D033	9	1E023	10	25171900	3446
R205	6	1D033	10	1E042	8	25171900	3446
R205	5	1D033	10	1GND		25171900	3446
R205	5	1D041	11	1E044	7	25171900	3446
R205	18	1E037	8	1H003	6	25171900	3446
R205	6	1E039	7	1D041	5	25171900	3446
R205	21	1E042	8	1I003	6	25171900	3446
R205	5	1E044	7	1GND		25171900	3446
R206	4	1D034	1	1D040	5	25171900	3446
R206	6	1D034	2	1E037	7	25171900	3446
R206	5	1D034	3	1D040	11	25171900	3446
R206	5	1D034	3	1GND		25171900	3446
R206	7	1D034	4	1E042	7	25171900	3446
R206	5	1D034	4	1GND		25171900	3446
R206	3	1D040	5	1D044	6	25171900	3446
R206	6	1D040	11	1D049	6	25171900	3446
R206	6	1D044	6	1E039	6	25171900	3446
R206	6	1D049	6	1E044	6	25171900	3446
R206	19	1E037	7	1H003	12	25171900	3446
R206	22	1E042	7	1I003	12	25171900	3446
R207	6	1D034	7	1E030	9	25171900	3446
R207	7	1D034	7	1E040	12	25171900	3446
R207	6	1D034	8	1E038	12	25171900	3446
R207	6	1D034	9	1D043	11	25171900	3446
R207	5	1D034	9	1E031	9	25171900	3446
R207	7	1D034	10	1E043	12	25171900	3446
R207	5	1D034	10	1GND		25171900	3446
R207	5	1D043	11	1E045	12	25171900	3446
R207	18	1E038	12	1H004	6	25171900	3446
R207	6	1E040	12	1D043	5	25171900	3446
R207	21	1E043	12	1I004	6	25171900	3446
R207	5	1E045	12	1GND		25171900	3446
R208	5	1D035	1	1D042	11	25171900	3446

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B208	8	1D035	1	1E024	8	25171900	3446
B208	5	1D035	2	1D042	10	25171900	3446
B208	8	1D035	2	1E024	7	25171900	3446
B208	8	1D035	3	1E025	8	25171900	3446
B208	5	1D035	3	1GND		25171900	3446
B208	7	1D035	4	1E027	11	25171900	3446
B208	8	1D035	4	1E045	10	25171900	3446
B208	3	1D042	10	1D044	10	25171900	3446
B208	3	1D042	11	1D044	11	25171900	3446
B208	2	1D048	10	1D049	10	25171900	3446
B208	2	1D048	11	1D049	11	25171900	3446
B208	5	1D049	10	1GND		25171900	3446
B208	3	1E024	7	1E026	5	25171900	3446
B208	6	1E024	8	1E033	5	25171900	3446
B208	6	1E025	8	1E033	11	25171900	3446
B208	2	1E026	5	1E027	5	25171900	3446
B208	3	1E026	11	1E025	7	25171900	3446
B208	8	1E027	5	1E040	10	25171900	3446
B208	2	1E027	11	1E026	11	25171900	3446
B208	2	1E033	5	1E034	5	25171900	3446
B208	2	1E033	11	1E034	11	25171900	3446
B208	5	1E034	5	1E040	11	25171900	3446
B208	6	1E034	11	1E045	11	25171900	3446
B208	5	1E045	10	1D048	10	25171900	3446
B208	5	1E045	11	1D048	11	25171900	3446
B209	5	1D035	7	1D042	9	25171900	3446
B209	5	1D035	7	1E032	3	25171900	3446
B209	6	1D035	8	1E038	11	25171900	3446
B209	6	1D035	9	1E032	9	25171900	3446
B209	5	1D035	9	1GND		25171900	3446
B209	7	1D035	10	1E043	11	25171900	3446
B209	5	1D035	10	1GND		25171900	3446
B209	3	1D042	9	1D044	9	25171900	3446
B209	2	1D048	9	1D049	9	25171900	3446
B209	6	1E032	3	1E040	9	25171900	3446
B209	7	1E032	9	1E045	9	25171900	3446
B209	18	1E038	11	1H004	12	25171900	3446
B209	22	1E043	11	1I004	12	25171900	3446
B209	5	1E045	9	1D048	9	25171900	3446
B210	4	1D036	1	1D041	4	25171900	3446
B210	6	1D036	1	1E032	4	25171900	3446
B210	6	1D036	2	1E038	10	25171900	3446
B210	4	1D036	3	1D041	10	25171900	3446
B210	7	1D036	3	1E032	10	25171900	3446
B210	7	1D036	4	1E043	10	25171900	3446
B210	5	1D036	4	1GND		25171900	3446
B210	6	1D041	4	1E040	8	25171900	3446
B210	5	1D041	10	1E045	8	25171900	3446
B210	5	1E031	6	1GND		25171900	3446
B210	3	1E032	4	1E030	6	25171900	3446
B210	3	1E032	10	1E031	6	25171900	3446
B210	18	1E038	10	1H005	5	25171900	3446
B210	21	1E043	10	1I005	5	25171900	3446
B211	4	1D036	7	1D040	4	25171900	3446
B211	6	1D036	7	1E030	8	25171900	3446
B211	6	1D036	8	1E027	4	25171900	3446
B211	5	1D036	8	1E040	6	25171900	3446
B211	3	1D036	9	1D040	10	25171900	3446
B211	6	1D036	9	1E031	8	25171900	3446
B211	7	1D036	10	1E027	10	25171900	3446
B211	6	1D036	10	1E045	6	25171900	3446
B211	5	1D040	10	1GND		25171900	3446

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B211	5	1D046	12	1GND		25171900	3446
B211	2	1E027	4	1E026	4	25171900	3446
B211	2	1E027	10	1E026	10	25171900	3446
B211	3	1E030	8	1E032	5	25171900	3446
B211	3	1E031	8	1E032	11	25171900	3446
B211	2	1E032	5	1E033	4	25171900	3446
B211	2	1E032	11	1E033	10	25171900	3446
B211	2	1E033	4	1E034	4	25171900	3446
B211	2	1E033	10	1E034	10	25171900	3446
B211	5	1E034	4	1E040	7	25171900	3446
B211	6	1E034	10	1E045	7	25171900	3446
B211	6	1E040	6	1D046	6	25171900	3446
B211	4	1E045	6	1D046	12	25171900	3446
B212	7	1D037	1	1E030	7	25171900	3446
B212	7	1D037	1	1E041	12	25171900	3446
B212	6	1D037	2	1E038	9	25171900	3446
B212	6	1D037	3	1D048	8	25171900	3446
B212	7	1D037	3	1E031	7	25171900	3446
B212	7	1D037	4	1E043	9	25171900	3446
B212	5	1D037	4	1GND		25171900	3446
B212	4	1D042	8	1D047	6	25171900	3446
B212	5	1D047	12	1E046	12	25171900	3446
B212	3	1D048	8	1D047	12	25171900	3446
B212	5	1E030	7	1E024	6	25171900	3446
B212	5	1E031	7	1E025	6	25171900	3446
B212	18	1E038	9	1H005	12	25171900	3446
B212	6	1E041	12	1D042	8	25171900	3446
B212	22	1E043	9	1I005	12	25171900	3446
B212	5	1E046	12	1GND		25171900	3446
B213	6	1D037	7	1E041	11	25171900	3446
B213	5	1D037	8	1E038	8	25171900	3446
B213	6	1D037	9	1E033	9	25171900	3446
B213	7	1D037	9	1E046	11	25171900	3446
B213	6	1D037	10	1E043	8	25171900	3446
B213	5	1D037	10	1GND		25171900	3446
B213	5	1E033	3	1E027	3	25171900	3446
B213	5	1E033	9	1E027	9	25171900	3446
B213	17	1E038	8	1H006	6	25171900	3446
B213	5	1E041	11	1E033	3	25171900	3446
B213	21	1E043	8	1I006	6	25171900	3446
B213	5	1E046	11	1GND		25171900	3446
B214	7	1D038	1	1E041	10	25171900	3446
B214	6	1D038	2	1E038	7	25171900	3446
B214	7	1D038	3	1E046	10	25171900	3446
B214	5	1D038	3	1GND		25171900	3446
B214	6	1D038	4	1E043	7	25171900	3446
B214	5	1D038	4	1GND		25171900	3446
B214	5	1E034	3	1E026	3	25171900	3446
B214	5	1E034	9	1E026	9	25171900	3446
B214	18	1E038	7	1H006	12	25171900	3446
B214	5	1E041	10	1E034	3	25171900	3446
B214	22	1E043	7	1I006	12	25171900	3446
B214	7	1E046	10	1E034	9	25171900	3446
B215	4	1D039	1	1D035	5	25171900	3446
B216	2	1D039	7	1D039	6	25171900	3446
B300	4	1D027	1	1D031	6	25171900	3446
B301	4	1D027	5	1D032	6	25171900	3446
B301	3	1D032	6	1D032	12	25171900	3446
B301	4	1D032	12	1D035	6	25171900	3446
B302	3	1D027	9	1D031	12	25171900	3446
B303	4	1D028	1	1D033	6	25171900	3446
B304	4	1D028	5	1D033	12	25171900	3446

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B305	4	1D028	9	1D034	6	25171900	3446
B306	5	1D029	1	1D034	12	25171900	3446
B307	5	1D029	5	1D035	12	25171900	3446
B307	4	1D035	12	1D039	12	25171900	3446
B308	5	1D029	9	1D036	6	25171900	3446
B309	5	1D030	1	1D036	12	25171900	3446
B309	3	1D036	12	1D037	6	25171900	3446
B310	5	1D030	5	1D037	12	25171900	3446
B311	5	1D030	9	1D038	6	25171900	3446
B600	9	1D051	1	1F051	4	25171900	3446
B601	10	1D051	4	1F061	12	25171900	3446
B602	8	1D051	7	1F051	8	25171900	3446
B603	9	1D051	10	1F061	11	25171900	3446
B604	10	1D052	1	1F051	12	25171900	3446
B605	10	1D052	4	1F061	10	25171900	3446
B606	8	1D052	7	1F052	4	25171900	3446
B607	9	1D052	10	1F061	9	25171900	3446
B608	9	1D053	1	1F052	8	25171900	3446
B609	9	1D053	4	1F061	8	25171900	3446
B610	9	1D053	7	1F052	12	25171900	3446
B611	8	1D053	10	1F061	7	25171900	3446
B612	9	1D054	1	1F053	4	25171900	3446
B613	9	1D054	4	1F061	6	25171900	3446
B614	8	1D054	7	1F053	8	25171900	3446
B615	8	1D054	10	1F061	5	25171900	3446
B616	10	1D055	1	1F053	12	25171900	3446
B617	10	1D055	4	1F062	12	25171900	3446
B618	8	1D055	7	1F054	4	25171900	3446
B619	9	1D055	10	1F062	11	25171900	3446
B620	9	1D056	1	1F054	8	25171900	3446
B621	9	1D056	4	1F062	10	25171900	3446
B622	9	1D056	7	1F054	12	25171900	3446
B623	8	1D056	10	1F062	9	25171900	3446
B624	9	1D057	1	1F055	4	25171900	3446
B625	9	1D057	4	1F062	8	25171900	3446
B626	8	1D057	7	1F055	8	25171900	3446
B627	8	1D057	10	1F062	7	25171900	3446
B628	10	1D058	1	1F055	12	25171900	3446
B629	9	1D058	4	1F062	6	25171900	3446
B630	8	1D058	7	1F056	4	25171900	3446
B631	7	1D058	10	1F062	5	25171900	3446
B632	9	1D059	1	1F056	8	25171900	3446
B633	10	1D059	4	1F063	12	25171900	3446
B634	9	1D059	7	1F056	12	25171900	3446
B635	8	1D059	10	1F063	11	25171900	3446
B636	9	1D060	1	1F057	4	25171900	3446
B637	9	1D060	4	1F063	10	25171900	3446
B638	8	1D060	7	1F057	8	25171900	3446
B639	8	1D060	10	1F063	9	25171900	3446
B640	10	1D061	1	1F057	12	25171900	3446
B641	9	1D061	4	1F063	8	25171900	3446
B642	8	1D061	7	1F058	4	25171900	3446
B643	8	1D061	10	1F063	7	25171900	3446
B644	9	1D062	1	1F058	8	25171900	3446
B645	8	1D062	4	1F063	6	25171900	3446
B646	9	1D062	7	1F058	12	25171900	3446
B647	7	1D062	10	1F063	5	25171900	3446
B648	9	1D063	1	1F059	4	25171900	3446
B649	9	1D063	4	1F064	12	25171900	3446
B650	8	1D063	7	1F059	8	25171900	3446
B651	8	1D063	10	1F064	11	25171900	3446
B652	10	1D064	1	1F059	12	25171900	3446

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R653	9	1D064	4	1F064	10	25171900	3446
R654	8	1D064	7	1F060	4	25171900	3446
R655	8	1D064	10	1F064	9	25171900	3446
R656	9	1D065	1	1F060	8	25171900	3446
R657	9	1D065	4	1F064	8	25171900	3446
R658	9	1D065	7	1F060	12	25171900	3446
R659	8	1D065	10	1F064	7	25171900	3446
R660	15	1D066	1	1G044	4	25171900	3446
R661	8	1D066	4	1F064	6	25171900	3446
R662	15	1D066	7	1G044	8	25171900	3446
R663	7	1D066	10	1F064	5	25171900	3446
R664	16	1D067	1	1G044	12	25171900	3446
R665	10	1D067	4	1F065	12	25171900	3446
R666	14	1D067	7	1G045	4	25171900	3446
R667	8	1D067	10	1F065	11	25171900	3446
R668	16	1D068	1	1G045	8	25171900	3446
R669	9	1D068	4	1F065	10	25171900	3446
R670	16	1D068	7	1G045	12	25171900	3446
R671	8	1D068	10	1F065	9	25171900	3446
R672	15	1D069	1	1G046	4	25171900	3446
R673	9	1D069	4	1F065	8	25171900	3446
R674	15	1D069	7	1G046	8	25171900	3446
R675	8	1D069	10	1F065	7	25171900	3446
R676	17	1D070	1	1G046	12	25171900	3446
R677	9	1D070	4	1F065	6	25171900	3446
R678	15	1D070	7	1G047	4	25171900	3446
R679	8	1D070	10	1F065	5	25171900	3446
R680	16	1D071	1	1G047	8	25171900	3446
R681	10	1D071	4	1F066	12	25171900	3446
R682	16	1D071	7	1G047	12	25171900	3446
R683	9	1D071	10	1F066	11	25171900	3446
R684	16	1D072	1	1G048	4	25171900	3446
R685	9	1D072	4	1F066	10	25171900	3446
R686	15	1D072	7	1G048	8	25171900	3446
R687	8	1D072	10	1F066	9	25171900	3446
R688	17	1D073	1	1G048	12	25171900	3446
R689	9	1D073	4	1F066	8	25171900	3446
R690	15	1D073	7	1G049	4	25171900	3446
R691	8	1D073	10	1F066	7	25171900	3446
R692	16	1D074	1	1G049	8	25171900	3446
R693	9	1D074	4	1F066	6	25171900	3446
R694	16	1D074	7	1G049	12	25171900	3446
R696	8	1D074	10	1F066	5	25171900	3446
R696	16	1D075	1	1G050	4	25171900	3446
R697	10	1D075	4	1F067	12	25171900	3446
R698	15	1D075	7	1G050	8	25171900	3446
R699	9	1D075	10	1F067	11	25171900	3446
R700	17	1D076	1	1G050	12	25171900	3446
R701	10	1D076	4	1F067	10	25171900	3446
R702	15	1D076	7	1G051	4	25171900	3446
R703	9	1D076	10	1F067	9	25171900	3446
R704	17	1D077	1	1G051	8	25171900	3446
R705	10	1D077	4	1F067	8	25171900	3446
R706	16	1D077	7	1G051	12	25171900	3446
R707	9	1D077	10	1F067	7	25171900	3446
R708	16	1D078	1	1G052	4	25171900	3446
R709	10	1D078	4	1F067	6	25171900	3446
R710	16	1D078	7	1G052	8	25171900	3446
R711	9	1D078	10	1F067	5	25171900	3446
R712	17	1D079	1	1G052	12	25171900	3446
R713	10	1D079	4	1F068	12	25171900	3446
R714	15	1D079	7	1G053	4	25171900	3446

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R715	10	1D079	10	1F068	11	25171900	3446
R716	17	1D080	1	1G053	8	25171900	3446
R717	10	1D080	4	1F068	10	25171900	3446
R718	16	1D080	7	1G053	12	25171900	3446
R719	10	1D080	10	1F068	9	25171900	3446
R720	16	1D081	1	1G054	4	25171900	3446
R721	10	1D081	4	1F068	8	25171900	3446
R722	16	1D081	7	1G054	8	25171900	3446
R723	10	1D081	10	1F068	7	25171900	3446
R724	18	1D082	1	1G054	12	25171900	3446
R725	10	1D082	4	1F068	6	25171900	3446
R726	16	1D082	7	1G055	4	25171900	3446
R727	10	1D082	10	1F068	5	25171900	3446
R728	17	1D083	1	1G055	8	25171900	3446
R729	11	1D083	4	1F069	12	25171900	3446
R730	17	1D083	7	1G055	12	25171900	3446
R731	10	1D083	10	1F069	11	25171900	3446
R732	17	1D084	1	1G056	4	25171900	3446
R733	11	1D084	4	1F069	10	25171900	3446
R734	17	1D084	7	1G056	8	25171900	3446
R735	10	1D084	10	1F069	9	25171900	3446
R736	18	1D085	1	1G056	12	25171900	3446
R737	11	1D085	4	1F069	8	25171900	3446
R738	16	1D085	7	1G057	4	25171900	3446
R739	10	1D085	10	1F069	7	25171900	3446
R740	17	1D086	1	1G057	8	25171900	3446
R741	11	1D086	4	1F069	6	25171900	3446
R742	17	1D086	7	1G057	12	25171900	3446
R743	10	1D086	10	1F069	5	25171900	3446
R744	17	1D087	1	1G058	4	25171900	3446
R745	12	1D087	4	1F070	12	25171900	3446
R746	17	1D087	7	1G058	8	25171900	3446
R747	11	1D087	10	1F070	11	25171900	3446
R748	18	1D088	1	1G058	12	25171900	3446
R749	12	1D088	4	1F070	10	25171900	3446
R750	16	1D088	7	1G059	4	25171900	3446
R751	11	1D088	10	1F070	9	25171900	3446
R752	18	1D089	1	1G059	8	25171900	3446
R753	12	1D089	4	1F070	8	25171900	3446
R754	18	1D089	7	1G059	12	25171900	3446
R755	11	1D089	10	1F070	7	25171900	3446
R756	17	1D090	1	1G060	4	25171900	3446
R757	12	1D090	4	1F070	6	25171900	3446
R758	17	1D090	7	1G060	8	25171900	3446
R759	11	1D090	10	1F070	5	25171900	3446
R800	3	1F083	11	1F083	5	25171900	3446
R800	11	1G061	1	1F083	11	25171900	3446
R801	3	1F083	10	1F083	3	25171900	3446
R801	11	1G061	7	1F083	10	25171900	3446
R802	6	1F061	1	1G061	6	25171900	3446
R803	6	1F062	1	1G061	5	25171900	3446
R804	5	1F063	1	1G061	4	25171900	3446
R805	6	1F064	1	1G061	3	25171900	3446
R806	6	1F065	1	1G061	2	25171900	3446
R807	7	1F066	1	1G061	12	25171900	3446
R808	7	1F067	1	1G061	11	25171900	3446
R809	7	1F068	1	1G061	10	25171900	3446
R810	7	1F069	1	1G061	9	25171900	3446
R811	7	1F070	1	1G061	8	25171900	3446
C000	3	1C026	1	1C027	6	25171900	3446
C000	5	1C026	2	1GND		25171900	3446
C000	8	1C027	6	1C042	12	25171900	3446

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C001	3	1C026	7	1C027	12	25171900	3446
C001	7	1C026	8	1C039	12	25171900	3446
C001	8	1C027	12	1C042	11	25171900	3446
C002	9	1C026	12	1C043	12	25171900	3446
C002	4	1C027	1	1C026	12	25171900	3446
C003	2	1C027	7	1C026	6	25171900	3446
C003	8	1C027	7	1C043	11	25171900	3446
C005	10	1C047	1	1C026	9	25171900	3446
C006	10	1C047	7	1C026	4	25171900	3446
C010	4	1C028	1	1C027	11	25171900	3446
C010	3	1C028	1	1C029	6	25171900	3446
C010	5	1C028	2	1GND		25171900	3446
C010	7	1C029	6	1C042	10	25171900	3446
C011	3	1C028	7	1C027	10	25171900	3446
C011	3	1C028	7	1C029	12	25171900	3446
C011	6	1C028	8	1C039	11	25171900	3446
C011	7	1C029	12	1C042	9	25171900	3446
C012	8	1C028	12	1C043	10	25171900	3446
C012	4	1C029	1	1C028	12	25171900	3446
C013	2	1C029	7	1C028	6	25171900	3446
C013	7	1C029	7	1C043	9	25171900	3446
C014	10	1C048	1	1C028	9	25171900	3446
C015	10	1C048	7	1C028	4	25171900	3446
C020	3	1C029	11	1C027	9	25171900	3446
C020	4	1C030	1	1C029	11	25171900	3446
C020	3	1C030	1	1C031	6	25171900	3446
C020	5	1C030	2	1GND		25171900	3446
C020	4	1C031	6	1C042	8	25171900	3446
C021	3	1C029	10	1C027	8	25171900	3446
C021	3	1C030	7	1C029	10	25171900	3446
C021	3	1C030	7	1C031	12	25171900	3446
C021	5	1C030	8	1C039	10	25171900	3446
C021	6	1C031	12	1C042	7	25171900	3446
C022	4	1C031	1	1C030	12	25171900	3446
C022	7	1C031	1	1C043	8	25171900	3446
C023	2	1C031	7	1C030	6	25171900	3446
C023	6	1C031	7	1C043	7	25171900	3446
C024	9	1C049	1	1C030	9	25171900	3446
C025	9	1C049	7	1C030	5	25171900	3446
C030	3	1C032	1	1C033	6	25171900	3446
C030	5	1C032	2	1GND		25171900	3446
C030	5	1C033	6	1C041	12	25171900	3446
C031	5	1C032	7	1C041	11	25171900	3446
C031	15	1C032	7	1E004	12	25171900	3446
C031	4	1C032	8	1C039	9	25171900	3446
C032	7	1C032	12	1C044	12	25171900	3446
C032	4	1C033	1	1C032	12	25171900	3446
C033	2	1C033	7	1C032	6	25171900	3446
C033	6	1C033	7	1C044	11	25171900	3446
C035	15	1E004	7	1C033	5	25171900	3446
C040	3	1C034	1	1C035	6	25171900	3446
C040	16	1C034	1	1E004	11	25171900	3446
C040	5	1C034	2	1GND		25171900	3446
C040	4	1C035	6	1C041	10	25171900	3446
C041	3	1C034	7	1C035	12	25171900	3446
C041	15	1C034	7	1E004	10	25171900	3446
C041	4	1C034	8	1C039	8	25171900	3446
C041	4	1C035	12	1C041	9	25171900	3446
C042	6	1C034	12	1C044	10	25171900	3446
C042	4	1C035	1	1C034	12	25171900	3446
C043	5	1C034	6	1C044	9	25171900	3446
C043	2	1C035	7	1C034	6	25171900	3446

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C050	15	1C035	11	1E004	9	25171900	3446
C050	4	1C036	1	1C035	11	25171900	3446
C050	3	1C036	1	1C037	6	25171900	3446
C050	5	1C036	2	1GND		25171900	3446
C050	3	1C037	6	1C041	8	25171900	3446
C051	15	1C035	10	1E004	8	25171900	3446
C051	3	1C036	7	1C035	10	25171900	3446
C051	3	1C036	7	1C037	12	25171900	3446
C051	3	1C036	8	1C039	7	25171900	3446
C051	3	1C037	12	1C041	7	25171900	3446
C052	4	1C037	1	1C036	12	25171900	3446
C052	5	1C037	1	1C044	8	25171900	3446
C053	2	1C037	7	1C036	6	25171900	3446
C053	5	1C037	7	1C044	7	25171900	3446
C060	3	1C035	9	1C033	12	25171900	3446
C060	3	1C037	11	1C035	9	25171900	3446
C060	4	1C038	1	1C037	11	25171900	3446
C060	3	1C038	1	1C041	6	25171900	3446
C061	2	1C038	7	1C039	6	25171900	3446
C450	3	1J064	1	1J063	6	25171900	3446
C451	3	1J064	7	1J063	12	25171900	3446
C500	3	1F026	1	1F025	6	25171900	3446
C501	3	1F026	7	1F025	12	25171900	3446
C503	15	1E057	7	1F025	11	25171900	3446
D020	6	1D001	1	1E001	6	25171900	3446
D020	6	1D001	2	1E003	6	25171900	3446
D020	18	1D001	3	1C0045		25171900	3446
D020		1D001	4	1GND		25171900	3446
D021	7	1D002	1	1E001	12	25171900	3446
D021	6	1D002	2	1E003	5	25171900	3446
D021	5	1D002	3	1GND		25171900	3446
D021	5	1D002	4	1GND		25171900	3446
D022	6	1D003	1	1E002	6	25171900	3446
D022	5	1D003	2	1E003	4	25171900	3446
D022	5	1D003	3	1GND		25171900	3446
D022	5	1D003	4	1GND		25171900	3446
D023	7	1D004	1	1E002	12	25171900	3446
D023	5	1D004	2	1E003	3	25171900	3446
D023	5	1D004	3	1GND		25171900	3446
D023	5	1D004	4	1GND		25171900	3446
D024	6	1D005	1	1E001	5	25171900	3446
D024	7	1D005	2	1E003	12	25171900	3446
D024	5	1D005	3	1GND		25171900	3446
D024	5	1D005	4	1GND		25171900	3446
D025	7	1D006	1	1E001	11	25171900	3446
D025	7	1D006	2	1E003	11	25171900	3446
D025	5	1D006	3	1GND		25171900	3446
D025	5	1D006	4	1GND		25171900	3446
D026	6	1D007	1	1E002	5	25171900	3446
D026	7	1D007	2	1E003	10	25171900	3446
D026	5	1D007	3	1GND		25171900	3446
D026	5	1D007	4	1GND		25171900	3446
D027	7	1D008	1	1E002	11	25171900	3446
D027	7	1D008	2	1E003	9	25171900	3446
D027	5	1D008	3	1GND		25171900	3446
D027	5	1D008	4	1GND		25171900	3446
D028	7	1D009	1	1E001	4	25171900	3446
D028	6	1D009	2	1E004	6	25171900	3446
D028	5	1D009	3	1GND		25171900	3446
D028	5	1D009	4	1GND		25171900	3446
D029	8	1D010	1	1E001	10	25171900	3446
D029	6	1D010	2	1E004	5	25171900	3446

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D029	5	1D010	3	1GND	25171900	3446
D029	5	1D010	4	1GND	25171900	3446
D030	12	1B023	1	1E017-4	25171900	3446
D030	13	1B023	2	1E018-10	25171900	3446
D030		1B023	3	1GND	25171900	3446
D030	5	1B023	4	1GND	25171900	3446
D031	12	1B024	1	1E017-3	25171900	3446
D031	13	1B024	2	1E018-9	25171900	3446
D031	5	1B024	3	1GND	25171900	3446
D031	5	1B024	4	1GND	25171900	3446
D040	13	1B021	1	1C046 9	25171900	3446
D040	5	1B021	2	1GND	25171900	3446
D040	5	1B021	3	1GND	25171900	3446
D040	5	1B021	4	1GND	25171900	3446
D041	13	1B022	1	1C046 8	25171900	3446
D041	5	1B022	2	1GND	25171900	3446
D041	5	1B022	3	1GND	25171900	3446
D041	5	1B022	4	1GND	25171900	3446
E000	3	1J031	1	1J032 6	25171900	3446
E000	5	1J031	2	1GND	25171900	3446
E000	5	1J032	6	1J040 12	25171900	3446
E001	5	1J031	7	1J040 11	25171900	3446
E001	3	1J031	8	1J029 12	25171900	3446
E001	21	1J040	11	1E016 6	25171900	3446
E002	5	1J031	12	1J039 12	25171900	3446
E002	4	1J032	1	1J031 12	25171900	3446
E003	2	1J032	7	1J031 6	25171900	3446
E003	5	1J032	7	1J039 11	25171900	3446
E005	19	1E016	1	1J032 5	25171900	3446
E010	18	1J033	1	1E016 5	25171900	3446
E010	3	1J033	1	1J034 6	25171900	3446
E010	5	1J033	2	1GND	25171900	3446
E010	4	1J034	6	1J040 10	25171900	3446
E011	19	1J033	7	1E016 4	25171900	3446
E011	3	1J033	7	1J034 12	25171900	3446
E011	4	1J033	8	1J029 11	25171900	3446
E011	4	1J034	12	1J040 9	25171900	3446
E012	4	1J033	12	1J039 10	25171900	3446
E012	4	1J034	1	1J033 12	25171900	3446
E013	4	1J033	6	1J039 9	25171900	3446
E013	2	1J034	7	1J033 6	25171900	3446
E020	3	1J034	11	1J036 6	25171900	3446
E020	19	1J035	1	1E016 3	25171900	3446
E020	4	1J035	1	1J034 11	25171900	3446
E020	5	1J035	2	1GND	25171900	3446
E020	4	1J036	6	1J040 8	25171900	3446
E021	3	1J034	10	1J036 12	25171900	3446
E021	3	1J035	7	1J034 10	25171900	3446
E021	4	1J035	8	1J029 10	25171900	3446
E021	4	1J036	12	1J040 7	25171900	3446
E021	20	1J040	7	1E016 2	25171900	3446
E022	3	1J036	1	1J035 10	25171900	3446
E022	3	1J036	1	1J039 8	25171900	3446
E023	2	1J036	7	1J035 5	25171900	3446
E023	3	1J036	7	1J039 7	25171900	3446
E030	3	1J034	9	1J032 12	25171900	3446
E030	3	1J036	11	1J034 9	25171900	3446
E030	4	1J037	1	1J036 11	25171900	3446
E030	3	1J037	1	1J038 6	25171900	3446
E030	5	1J037	2	1GND	25171900	3446
E030	2	1J038	6	1J040 6	25171900	3446
E031	3	1J034	8	1J032 11	25171900	3446

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E031	3	1J036	10	1J034	8	25171900	3446
E031	3	1J037	7	1J036	10	25171900	3446
E031	3	1J037	7	1J038	12	25171900	3446
E031	5	1J037	8	1J029	9	25171900	3446
E031	3	1J038	12	1J040	5	25171900	3446
E032	3	1J038	1	1J037	9	25171900	3446
E032	3	1J038	1	1J039	6	25171900	3446
E033	2	1J038	7	1J037	5	25171900	3446
E033	2	1J038	7	1J039	5	25171900	3446
E100	22	1E006	1	1J031	11	25171900	3446
E101	20	1E006	7	1J031	5	25171900	3446
E110	22	1E007	1	1J033	11	25171900	3446
E111	20	1E007	7	1J033	5	25171900	3446
E120	22	1E008	1	1J035	11	25171900	3446
E121	20	1E008	7	1J035	6	25171900	3446
G000	8	1D015	1	1D031	5	25171900	3446
G000	5	1D015	2	1GND		25171900	3446
G000	5	1D015	3	1GND		25171900	3446
G000	5	1D015	4	1GND		25171900	3446
G001	8	1D016	1	1D032	5	25171900	3446
G001	5	1D016	2	1GND		25171900	3446
G001	5	1D016	3	1GND		25171900	3446
G001	5	1D016	4	1GND		25171900	3446
G001	3	1D032	5	1D032	11	25171900	3446
G001	5	1D032	11	1D039	11	25171900	3446
G002	8	1D017	1	1D031	11	25171900	3446
G002	5	1D017	2	1GND		25171900	3446
G002	5	1D017	3	1GND		25171900	3446
G002	5	1D017	4	1GND		25171900	3446
G003	8	1D018	1	1D033	5	25171900	3446
G003	5	1D018	2	1GND		25171900	3446
G003	5	1D018	3	1GND		25171900	3446
G003	5	1D018	4	1GND		25171900	3446
G004	8	1D019	1	1D033	11	25171900	3446
G004	5	1D019	2	1GND		25171900	3446
G004	5	1D019	3	1GND		25171900	3446
G004	5	1D019	4	1GND		25171900	3446
G005	8	1D020	1	1D034	5	25171900	3446
G005	5	1D020	2	1GND		25171900	3446
G005	5	1D020	3	1GND		25171900	3446
G005	5	1D020	4	1GND		25171900	3446
G006	8	1D021	1	1D034	11	25171900	3446
G006	5	1D021	2	1GND		25171900	3446
G006	5	1D021	3	1GND		25171900	3446
G006	5	1D021	4	1GND		25171900	3446
G007	8	1D022	1	1D035	11	25171900	3446
G007	3	1D022	1	1D039	10	25171900	3446
G007	5	1D022	2	1GND		25171900	3446
G007	5	1D022	3	1GND		25171900	3446
G007	5	1D022	4	1GND		25171900	3446
G008	7	1D023	1	1D036	5	25171900	3446
G008	5	1D023	2	1GND		25171900	3446
G008	5	1D023	3	1GND		25171900	3446
G008	5	1D023	4	1GND		25171900	3446
G009	7	1D024	1	1D036	11	25171900	3446
G009	5	1D024	2	1GND		25171900	3446
G009	5	1D024	3	1GND		25171900	3446
G009	5	1D024	4	1GND		25171900	3446
G009	3	1D036	11	1D037	5	25171900	3446
G010	7	1D025	1	1D037	11	25171900	3446
G010	5	1D025	2	1GND		25171900	3446
G010	5	1D025	3	1GND		25171900	3446

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G010	5	1D025	4	1GND		25171900	3446
G011	7	1D026	1	1D038	5	25171900	3446
G011	5	1D026	2	1GND		25171900	3446
G011	5	1D026	3	1GND		25171900	3446
G011	5	1D026	4	1GND		25171900	3446
G020	10	1C019	1	1C040	12	25171900	3446
G020	5	1C019	2	1C026	11	25171900	3446
G020	6	1C019	3	1C028	11	25171900	3446
G020	6	1C019	4	1C030	11	25171900	3446
G021	10	1C020	1	1C040	11	25171900	3446
G021	4	1C020	2	1C026	5	25171900	3446
G021	5	1C020	3	1C028	10	25171900	3446
G021	6	1C020	4	1C030	10	25171900	3446
G022	18	1C001	1	1C040	10	25171900	3446
G022	12	1C001	2	1C026	10	25171900	3446
G022	13	1C001	3	1C028	5	25171900	3446
G022	22	1C001	4	1C049	12	25171900	3446
G023	18	1C002	1	1C040	9	25171900	3446
G023	22	1C002	2	1C047	6	25171900	3446
G023	22	1C002	3	1C048	6	25171900	3446
G023	22	1C002	4	1C049	11	25171900	3446
G024	18	1C003	1	1C040	8	25171900	3446
G024	21	1C003	2	1C047	12	25171900	3446
G024	21	1C003	3	1C048	12	25171900	3446
G024	6	1C003	4	1C030	4	25171900	3446
G025	18	1C004	1	1C040	7	25171900	3446
G025	21	1C004	2	1C047	5	25171900	3446
G025	21	1C004	3	1C048	11	25171900	3446
G025	21	1C004	4	1C049	6	25171900	3446
G026	12	1C021	1	1C046	10	25171900	3446
G026	12	1C021	2	1C047	11	25171900	3446
G026	12	1C021	3	1C048	5	25171900	3446
G026	13	1C021	4	1C049	5	25171900	3446
G027	12	1C022	1	1C046	12	25171900	3446
G027	12	1C022	2	1C047	4	25171900	3446
G027	13	1C022	3	1C048	4	25171900	3446
G027	13	1C022	4	1C049	4	25171900	3446
G030	13	1C023	1	1E006	12	25171900	3446
G030	12	1C023	2	1E007	12	25171900	3446
G030	12	1C023	3	1E008	12	25171900	3446
G030	11	1C023	4	1E009	12	25171900	3446
G031	12	1C024	1	1E006	6	25171900	3446
G031	12	1C024	2	1E007	11	25171900	3446
G031	12	1C024	3	1E008	11	25171900	3446
G031	11	1C024	4	1E009	11	25171900	3446
G032	13	1C025	1	1E006	11	25171900	3446
G032	12	1C025	2	1E007	6	25171900	3446
G032	12	1C025	3	1E008	10	25171900	3446
G032	11	1C025	4	1E009	10	25171900	3446
G033	6	1D011	1	1E006	5	25171900	3446
G033	6	1D011	2	1E007	5	25171900	3446
G033	6	1D011	3	1E008	9	25171900	3446
G033	6	1D011	4	1E009	9	25171900	3446
G034	7	1D012	1	1E006	10	25171900	3446
G034	7	1D012	2	1E007	10	25171900	3446
G034	6	1D012	3	1E008	6	25171900	3446
G034	6	1D012	4	1E009	8	25171900	3446
G035	7	1D013	1	1E006	4	25171900	3446
G035	7	1D013	2	1E007	9	25171900	3446
G035	6	1D013	3	1E008	5	25171900	3446
G035	6	1D013	4	1E009	7	25171900	3446
G036	7	1D014	1	1E006	9	25171900	3446

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G036	6	1D014	2	1E007	4	25171900	3446
G036	6	1D014	3	1E008	4	25171900	3446
G036	6	1D014	4	1E009	6	25171900	3446
G037	3	1E010	1	1E006	3	25171900	3446
G037	3	1E010	2	1E007	3	25171900	3446
G037	3	1E010	3	1E008	3	25171900	3446
G037	2	1E010	4	1E009	5	25171900	3446
G038	4	1E011	1	1E006	8	25171900	3446
G038	4	1E011	2	1E007	8	25171900	3446
G038	3	1E011	3	1E008	8	25171900	3446
G038	3	1E011	4	1E015	6	25171900	3446
G039	4	1E012	1	1E006	2	25171900	3446
G039	20	1E012	2	1J033	10	25171900	3446
G039	21	1E012	3	1J035	9	25171900	3446
G039	3	1E012	4	1E015	5	25171900	3446
G040	20	1E013	1	1J031	10	25171900	3446
G040	4	1E013	2	1E007	2	25171900	3446
G040	3	1E013	3	1E015	4	25171900	3446
G040	5	1E013	4	1GND		25171900	3446
G041	19	1E014	1	1J031	4	25171900	3446
G041	19	1E014	2	1J033	4	25171900	3446
G041	2	1E014	3	1E015	3	25171900	3446
G041	5	1E014	4	1GND		25171900	3446
H001	11	1B025	1	1B001	3	25171900	3446
H001	12	1B025	1	1C050	4	25171900	3446
H001	18	1B025	2	1B065	12	25171900	3446
H002	11	1B025	7	1B001	6	25171900	3446
H002	12	1B025	7	1C050	8	25171900	3446
H002	18	1B025	8	1B065	11	25171900	3446
H003	12	1B026	1	1B001	9	25171900	3446
H003	13	1B026	1	1C050	12	25171900	3446
H003	17	1B026	2	1B065	10	25171900	3446
H004	12	1B026	7	1B001	12	25171900	3446
H004	12	1B026	7	1C051	4	25171900	3446
H004	17	1B026	8	1B065	9	25171900	3446
H005	12	1B027	1	1B002	3	25171900	3446
H005	12	1B027	1	1C051	8	25171900	3446
H005	17	1B027	2	1B065	8	25171900	3446
H006	12	1B027	7	1B002	6	25171900	3446
H006	12	1B027	7	1C051	12	25171900	3446
H006	17	1B027	8	1B065	7	25171900	3446
H007	12	1B028	1	1B002	9	25171900	3446
H007	12	1B028	1	1C052	4	25171900	3446
H007	16	1B028	2	1B065	6	25171900	3446
H008	12	1B028	7	1B002	12	25171900	3446
H008	12	1B028	7	1C052	8	25171900	3446
H008	16	1B028	8	1B065	5	25171900	3446
H009	12	1B029	1	1B003	3	25171900	3446
H009	12	1B029	1	1C052	12	25171900	3446
H009	17	1B029	2	1B066	12	25171900	3446
H010	12	1B029	7	1B003	6	25171900	3446
H010	12	1B029	7	1C053	4	25171900	3446
H010	17	1B029	8	1B066	11	25171900	3446
H011	13	1B030	1	1B003	9	25171900	3446
H011	12	1B030	1	1C053	8	25171900	3446
H011	16	1B030	2	1B066	10	25171900	3446
H012	12	1B030	7	1B003	12	25171900	3446
H012	12	1B030	7	1C053	12	25171900	3446
H012	16	1B030	8	1B066	9	25171900	3446
H013	13	1B031	1	1B004	3	25171900	3446
H013	12	1B031	1	1C054	4	25171900	3446
H013	16	1B031	2	1B066	8	25171900	3446

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H014	13	18031	7	18004	6	25171900	3446
H014	12	18031	7	1C054	8	25171900	3446
H014	16	18031	8	18066	7	25171900	3446
H015	13	18032	1	18004	9	25171900	3446
H015	12	18032	1	1C054	12	25171900	3446
H015	15	18032	2	18066	6	25171900	3446
H016	13	18032	7	18004	12	25171900	3446
H016	11	18032	7	1C055	4	25171900	3446
H016	15	18032	8	18066	5	25171900	3446
H017	13	18033	1	18005	3	25171900	3446
H017	11	18033	1	1C055	8	25171900	3446
H017	15	18033	2	18067	12	25171900	3446
H018	13	18033	7	18005	6	25171900	3446
H018	11	18033	7	1C055	12	25171900	3446
H018	15	18033	8	18067	11	25171900	3446
H019	13	18034	1	18005	9	25171900	3446
H019	11	18034	1	1C056	4	25171900	3446
H019	15	18034	2	18067	10	25171900	3446
H020	13	18034	7	18005	12	25171900	3446
H020	11	18034	7	1C056	8	25171900	3446
H020	15	18034	8	18067	9	25171900	3446
H021	13	18035	1	18006	3	25171900	3446
H021	11	18035	1	1C056	12	25171900	3446
H021	15	18035	2	18067	8	25171900	3446
H022	13	18035	7	18006	6	25171900	3446
H022	11	18035	7	1C057	4	25171900	3446
H022	15	18035	8	18067	7	25171900	3446
H023	14	18036	1	18006	9	25171900	3446
H023	11	18036	1	1C057	8	25171900	3446
H023	14	18036	2	18067	6	25171900	3446
H024	14	18036	7	18006	12	25171900	3446
H024	11	18036	7	1C057	12	25171900	3446
H024	14	18036	8	18067	5	25171900	3446
H025	14	18037	1	18007	3	25171900	3446
H025	11	18037	1	1C058	4	25171900	3446
H025	14	18037	2	18068	12	25171900	3446
H026	14	18037	7	18007	6	25171900	3446
H026	11	18037	7	1C058	8	25171900	3446
H026	14	18037	8	18068	11	25171900	3446
H027	14	18038	1	18007	9	25171900	3446
H027	11	18038	1	1C058	12	25171900	3446
H027	14	18038	2	18068	10	25171900	3446
H028	14	18038	7	18007	12	25171900	3446
H028	10	18038	7	1C059	4	25171900	3446
H028	14	18038	8	18068	9	25171900	3446
H029	14	18039	1	18008	3	25171900	3446
H029	11	18039	1	1C059	8	25171900	3446
H029	13	18039	2	18068	8	25171900	3446
H030	14	18039	7	18008	6	25171900	3446
H030	11	18039	7	1C059	12	25171900	3446
H030	13	18039	8	18068	7	25171900	3446
H031	15	18040	1	18008	9	25171900	3446
H031	11	18040	1	1C060	4	25171900	3446
H031	13	18040	2	18068	6	25171900	3446
H032	15	18040	7	18008	12	25171900	3446
H032	11	18040	7	1C060	8	25171900	3446
H032	13	18040	8	18068	5	25171900	3446
H033	15	18041	1	18009	3	25171900	3446
H033	11	18041	1	1C060	12	25171900	3446
H033	13	18041	2	18069	12	25171900	3446
H034	15	18041	7	18009	6	25171900	3446
H034	10	18041	7	1C061	4	25171900	3446

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1034	13	18041	8	18069	11	25171900	3446
1035	15	18042	1	18009	9	25171900	3446
1035	10	18042	1	1C061	8	25171900	3446
1035	13	18042	2	18069	10	25171900	3446
1036	15	18042	7	18009	12	25171900	3446
1036	10	18042	7	1C061	12	25171900	3446
1036	13	18042	8	18069	9	25171900	3446
1037	15	18043	1	18010	3	25171900	3446
1037	10	18043	1	1C062	4	25171900	3446
1037	12	18043	2	18069	8	25171900	3446
1038	15	18043	7	18010	6	25171900	3446
1038	10	18043	7	1C062	8	25171900	3446
1038	12	18043	8	18069	7	25171900	3446
1039	15	18044	1	18010	9	25171900	3446
1039	10	18044	1	1C062	12	25171900	3446
1039	12	18044	2	18069	6	25171900	3446
1040	15	18044	7	18010	12	25171900	3446
1040	10	18044	7	1C063	4	25171900	3446
1040	12	18044	8	18069	5	25171900	3446
1041	15	18045	1	18011	3	25171900	3446
1041	10	18045	1	1C063	8	25171900	3446
1041	12	18045	2	18070	12	25171900	3446
1042	15	18045	7	18011	6	25171900	3446
1042	10	18045	7	1C063	12	25171900	3446
1042	12	18045	8	18070	11	25171900	3446
1043	16	18046	1	18011	9	25171900	3446
1043	10	18046	1	1C064	4	25171900	3446
1043	11	18046	2	18070	10	25171900	3446
1044	16	18046	7	18011	12	25171900	3446
1044	10	18046	7	1C064	8	25171900	3446
1044	11	18046	8	18070	9	25171900	3446
1045	16	18047	1	18012	3	25171900	3446
1045	10	18047	1	1C064	12	25171900	3446
1045	11	18047	2	18070	8	25171900	3446
1046	16	18047	7	18012	6	25171900	3446
1046	10	18047	7	1C065	4	25171900	3446
1046	11	18047	8	18070	7	25171900	3446
1047	16	18048	1	18012	9	25171900	3446
1047	10	18048	1	1C065	8	25171900	3446
1047	11	18048	2	18070	6	25171900	3446
1048	16	18048	7	18012	12	25171900	3446
1048	10	18048	7	1C065	12	25171900	3446
1048	10	18048	8	18070	5	25171900	3446
1049	16	18049	1	18013	3	25171900	3446
1049	10	18049	1	1C066	4	25171900	3446
1049	10	18049	2	18071	12	25171900	3446
1050	16	18049	7	18013	6	25171900	3446
1050	10	18049	7	1C066	8	25171900	3446
1050	10	18049	8	18071	11	25171900	3446
1051	17	18050	1	18013	9	25171900	3446
1051	10	18050	1	1C066	12	25171900	3446
1051	10	18050	2	18071	10	25171900	3446
1052	17	18050	7	18013	12	25171900	3446
1052	9	18050	7	1C067	4	25171900	3446
1052	10	18050	8	18071	9	25171900	3446
1053	17	18051	1	18014	3	25171900	3446
1053	9	18051	1	1C067	8	25171900	3446
1053	10	18051	2	18071	8	25171900	3446
1054	17	18051	7	18014	6	25171900	3446
1054	9	18051	7	1C067	12	25171900	3446
1054	10	18051	8	18071	7	25171900	3446
1055	17	18052	1	18014	9	25171900	3446

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H055	9	18052	1	1C068	4	25171900	3446
H055	9	18052	2	18071	6	25171900	3446
H056	17	18052	7	18014	12	25171900	3446
H056	9	18052	7	1C068	8	25171900	3446
H056	9	18052	8	18071	5	25171900	3446
H057	17	18053	1	18015	3	25171900	3446
H057	9	18053	1	1C068	12	25171900	3446
H057	9	18053	2	18072	12	25171900	3446
H058	17	18053	7	18015	6	25171900	3446
H058	9	18053	7	1C069	4	25171900	3446
H058	9	18053	8	18072	11	25171900	3446
H059	18	18054	1	18015	9	25171900	3446
H059	9	18054	1	1C069	8	25171900	3446
H059	9	18054	2	18072	10	25171900	3446
H060	18	18054	7	18015	12	25171900	3446
H060	9	18054	7	1C069	12	25171900	3446
H060	9	18054	8	18072	9	25171900	3446
H061	18	18055	1	18016	3	25171900	3446
H061	9	18055	1	1C070	4	25171900	3446
H061	9	18055	2	18072	8	25171900	3446
H062	18	18055	7	18016	6	25171900	3446
H062	9	18055	7	1C070	8	25171900	3446
H062	9	18055	8	18072	7	25171900	3446
H063	18	18056	1	18016	9	25171900	3446
H063	9	18056	1	1C070	12	25171900	3446
H063	8	18056	2	18072	6	25171900	3446
H064	18	18056	7	18016	12	25171900	3446
H064	8	18056	7	1C071	4	25171900	3446
H064	8	18056	8	18072	5	25171900	3446
H065	18	18057	1	18017	3	25171900	3446
H065	9	18057	1	1C071	8	25171900	3446
H065	8	18057	2	18073	12	25171900	3446
H066	18	18057	7	18017	6	25171900	3446
H066	9	18057	7	1C071	12	25171900	3446
H066	8	18057	8	18073	11	25171900	3446
H067	18	18058	1	18017	9	25171900	3446
H067	8	18058	1	1C072	4	25171900	3446
H067	8	18058	2	18073	10	25171900	3446
H068	18	18058	7	18017	12	25171900	3446
H068	8	18058	7	1C072	8	25171900	3446
H068	8	18058	8	18073	9	25171900	3446
H069	18	18059	1	18018	3	25171900	3446
H069	9	18059	1	1C072	12	25171900	3446
H069	8	18059	2	18073	8	25171900	3446
H070	18	18059	7	18018	6	25171900	3446
H070	8	18059	7	1C073	4	25171900	3446
H070	8	18059	8	18073	7	25171900	3446
H071	19	18060	1	18018	9	25171900	3446
H071	8	18060	1	1C073	8	25171900	3446
H071	7	18060	2	18073	6	25171900	3446
H072	19	18060	7	18018	12	25171900	3446
H072	8	18060	7	1C073	12	25171900	3446
H072	7	18060	8	18073	5	25171900	3446
H073	19	18061	1	18019	3	25171900	3446
H073	8	18061	1	1C074	4	25171900	3446
H073	7	18061	2	18074	12	25171900	3446
H074	19	18061	7	18019	6	25171900	3446
H074	8	18061	7	1C074	8	25171900	3446
H074	7	18061	8	18074	11	25171900	3446
H075	19	18062	1	18019	9	25171900	3446
H075	8	18062	1	1C074	12	25171900	3446
H075	7	18062	2	18074	10	25171900	3446

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H076	19	18062	7	18019	12	25171900	3446
H076	8	18062	7	1C075	4	25171900	3446
H076	7	18062	8	18074	9	25171900	3446
H077	19	18063	1	18020	3	25171900	3446
H077	8	18063	1	1C075	8	25171900	3446
H077	6	18063	2	18074	8	25171900	3446
H078	19	18063	7	18020	6	25171900	3446
H078	8	18063	7	1C075	12	25171900	3446
H078	6	18063	8	18074	7	25171900	3446
H079	19	18064	1	18020	9	25171900	3446
H079	8	18064	1	1C076	4	25171900	3446
H079	6	18064	2	18074	6	25171900	3446
H080	19	18064	7	18020	12	25171900	3446
H080	8	18064	7	1C076	8	25171900	3446
H080	6	18064	8	18074	5	25171900	3446
H101	12	1C050	1	18025	6	25171900	3446
H102	12	1C050	5	18025	12	25171900	3446
H103	12	1C050	9	18026	6	25171900	3446
H104	12	1C051	1	18026	12	25171900	3446
H105	12	1C051	5	18027	6	25171900	3446
H106	12	1C051	9	18027	12	25171900	3446
H107	12	1C052	1	18028	6	25171900	3446
H108	12	1C052	5	18028	12	25171900	3446
H109	12	1C052	9	18029	6	25171900	3446
H110	12	1C053	1	18029	12	25171900	3446
H111	12	1C053	5	18030	6	25171900	3446
H112	12	1C053	9	18030	12	25171900	3446
H113	11	1C054	1	18031	6	25171900	3446
H114	11	1C054	5	18031	12	25171900	3446
H115	11	1C054	9	18032	6	25171900	3446
H116	11	1C055	1	18032	12	25171900	3446
H117	11	1C055	5	18033	6	25171900	3446
H118	11	1C055	9	18033	12	25171900	3446
H119	11	1C056	1	18034	6	25171900	3446
H120	11	1C056	5	18034	12	25171900	3446
H121	11	1C056	9	18035	6	25171900	3446
H122	10	1C057	1	18035	12	25171900	3446
H123	10	1C057	5	18036	6	25171900	3446
H124	10	1C057	9	18036	12	25171900	3446
H125	10	1C058	1	18037	6	25171900	3446
H126	10	1C058	5	18037	12	25171900	3446
H127	10	1C058	9	18038	6	25171900	3446
H128	10	1C059	1	18038	12	25171900	3446
H129	10	1C059	5	18039	6	25171900	3446
H130	10	1C059	9	18039	12	25171900	3446
H131	10	1C060	1	18040	6	25171900	3446
H132	10	1C060	5	18040	12	25171900	3446
H133	10	1C060	9	18041	6	25171900	3446
H134	10	1C061	1	18041	12	25171900	3446
H135	10	1C061	5	18042	6	25171900	3446
H136	10	1C061	9	18042	12	25171900	3446
H137	10	1C062	1	18043	6	25171900	3446
H138	10	1C062	5	18043	12	25171900	3446
H139	10	1C062	9	18044	6	25171900	3446
H140	10	1C063	1	18044	12	25171900	3446
H141	10	1C063	5	18045	6	25171900	3446
H142	10	1C063	9	18045	12	25171900	3446
H143	9	1C064	1	18046	6	25171900	3446
H144	9	1C064	5	18046	12	25171900	3446
H145	9	1C064	9	18047	6	25171900	3446
H146	9	1C065	1	18047	12	25171900	3446
H147	9	1C065	5	18048	6	25171900	3446

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H148	9	1C065	9	1B048	12	25171900	3446
H149	9	1C066	1	1B049	6	25171900	3446
H150	9	1C066	5	1B049	12	25171900	3446
H151	9	1C066	9	1B050	6	25171900	3446
H152	9	1C067	1	1B050	12	25171900	3446
H153	9	1C067	5	1B051	6	25171900	3446
H154	9	1C067	9	1B051	12	25171900	3446
H155	9	1C068	1	1B052	6	25171900	3446
H156	9	1C068	5	1B052	12	25171900	3446
H157	9	1C068	9	1B053	6	25171900	3446
H158	9	1C069	1	1B053	12	25171900	3446
H159	9	1C069	5	1B054	6	25171900	3446
H160	9	1C069	9	1B054	12	25171900	3446
H161	8	1C070	1	1B055	6	25171900	3446
H162	8	1C070	5	1B055	12	25171900	3446
H163	8	1C070	9	1B056	6	25171900	3446
H164	8	1C071	1	1B056	12	25171900	3446
H165	8	1C071	5	1B057	6	25171900	3446
H166	8	1C071	9	1B057	12	25171900	3446
H167	8	1C072	1	1B058	6	25171900	3446
H168	8	1C072	5	1B058	12	25171900	3446
H169	8	1C072	9	1B059	6	25171900	3446
H170	8	1C073	1	1B059	12	25171900	3446
H171	8	1C073	5	1B060	6	25171900	3446
H172	8	1C073	9	1B060	12	25171900	3446
H173	8	1C074	1	1B061	6	25171900	3446
H174	8	1C074	5	1B061	12	25171900	3446
H175	8	1C074	9	1B062	6	25171900	3446
H176	8	1C075	1	1B062	12	25171900	3446
H177	8	1C075	5	1B063	6	25171900	3446
H178	8	1C075	9	1B063	12	25171900	3446
H179	7	1C076	1	1B064	6	25171900	3446
H180	7	1C076	5	1B064	12	25171900	3446
J010	6	1H010	1	1H001	6	25171900	3446
J011	6	1H010	7	1H001	12	25171900	3446
J012	6	1H011	1	1H002	5	25171900	3446
J013	6	1H011	7	1H002	12	25171900	3446
J014	6	1H012	1	1H003	5	25171900	3446
J015	6	1H012	7	1H003	11	25171900	3446
J016	6	1H013	1	1H004	5	25171900	3446
J017	6	1H013	7	1H004	11	25171900	3446
J018	6	1H014	1	1H005	4	25171900	3446
J019	6	1H014	7	1H005	11	25171900	3446
J010	6	1H015	1	1H006	5	25171900	3446
J011	6	1H015	7	1H006	11	25171900	3446
J012	6	1H016	1	1H007	6	25171900	3446
J013	12	1H031	1	1H007	12	25171900	3446
J014	11	1H031	7	1H008	6	25171900	3446
J014	12	1H031	7	1H056	5	25171900	3446
J015	16	1H032	1	1D050	3	25171900	3446
J015	12	1H032	1	1H008	10	25171900	3446
J016	3	1H029	7	1H031	6	25171900	3446
J016	5	1H029	8	1GND		25171900	3446
J016	3	1H031	6	1H031	12	25171900	3446
J017	11	1H032	7	1H009	6	25171900	3446
J017	11	1H032	7	1H056	12	25171900	3446
J018	14	1H033	1	1I063	6	25171900	3446
J019	32	1J085	1	1H009	12	25171900	3446
J020	5	1H017	1	1H010	5	25171900	3446
J021	5	1H017	7	1H010	11	25171900	3446
J022	5	1H018	1	1H011	5	25171900	3446
J023	5	1H018	7	1H011	11	25171900	3446

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J024	5	1H019	1	1H012	5	25171900	3446
J025	5	1H019	7	1H012	11	25171900	3446
J028	4	1H020	1	1H014	5	25171900	3446
J029	4	1H020	7	1H014	9	25171900	3446
J030	4	1H021	1	1H015	3	25171900	3446
J031	4	1H021	7	1H015	9	25171900	3446
J032	2	1H033	7	1H032	6	25171900	3446
J033	4	1H034	1	1H031	10	25171900	3446
J034	15	1I064	1	1H032	4	25171900	3446
J035	13	1G006	1	1H031	5	25171900	3446
J036	3	1J042	1	1J041	6	25171900	3446
J036	3	1J042	2	1J043	11	25171900	3446
J036	20	1J043	11	1F072	3	25171900	3446
J040	20	1J044	1	1H001	3	25171900	3446
J041	20	1J044	7	1H001	9	25171900	3446
J042	20	1J045	1	1H002	3	25171900	3446
J043	2	1J045	7	1J045	6	25171900	3446
J050	6	1H010	4	1H001	11	25171900	3446
J050	5	1H010	10	1H001	5	25171900	3446
J050	2	1H011	3	1H010	4	25171900	3446
J050	3	1H011	4	1H010	10	25171900	3446
J050	6	1H022	1	1H011	4	25171900	3446
J050	6	1H022	2	1H011	3	25171900	3446
J051	3	1H001	4	1H001	10	25171900	3446
J051	5	1H010	3	1H002	4	25171900	3446
J051	3	1H010	9	1H010	3	25171900	3446
J051	9	1H018	5	1H001	4	25171900	3446
J051	6	1H022	7	1H010	9	25171900	3446
J051	4	1H022	8	1H018	5	25171900	3446
J052	6	1H011	10	1H003	4	25171900	3446
J052	3	1H012	4	1H012	10	25171900	3446
J052	2	1H012	9	1H011	10	25171900	3446
J052	6	1H012	10	1H002	11	25171900	3446
J052	6	1H023	1	1H012	4	25171900	3446
J052	6	1H023	2	1H012	9	25171900	3446
J053	3	1H003	3	1H003	9	25171900	3446
J053	2	1H003	9	1H002	10	25171900	3446
J053	5	1H011	9	1H003	10	25171900	3446
J053	3	1H012	3	1H011	9	25171900	3446
J053	6	1H023	7	1H012	3	25171900	3446
J053	10	1H023	8	1H003	3	25171900	3446
J054	6	1H013	5	1H004	10	25171900	3446
J054	6	1H013	11	1H004	4	25171900	3446
J054	2	1H014	3	1H013	5	25171900	3446
J054	3	1H014	4	1H013	11	25171900	3446
J054	6	1H024	1	1H014	4	25171900	3446
J054	6	1H024	2	1H014	3	25171900	3446
J055	3	1H004	9	1H004	3	25171900	3446
J055	5	1H013	4	1H005	3	25171900	3446
J055	3	1H013	10	1H013	4	25171900	3446
J055	8	1H020	6	1H004	9	25171900	3446
J055	6	1H024	7	1H013	10	25171900	3446
J055	4	1H024	8	1H020	6	25171900	3446
J056	5	1H014	11	1H006	4	25171900	3446
J056	3	1H015	5	1H015	11	25171900	3446
J056	2	1H015	10	1H014	11	25171900	3446
J056	6	1H015	11	1H005	10	25171900	3446
J056	6	1H025	1	1H015	5	25171900	3446
J056	6	1H025	2	1H015	10	25171900	3446
J057	3	1H005	9	1H006	3	25171900	3446
J057	2	1H006	9	1H005	9	25171900	3446
J057	5	1H014	10	1H006	10	25171900	3446

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J057	3	1H015	4	1H014	10	25171900	3446
J057	6	1H025	7	1H015	4	25171900	3446
J057	10	1H025	8	1H006	9	25171900	3446
J058	3	1H022	6	1H022	12	25171900	3446
J058	3	1H026	1	1H022	6	25171900	3446
J059	3	1H023	6	1H023	12	25171900	3446
J059	3	1H026	5	1H023	6	25171900	3446
J060	3	1H024	6	1H024	12	25171900	3446
J060	3	1H026	9	1H024	6	25171900	3446
J061	3	1H025	6	1H025	12	25171900	3446
J061	3	1H027	1	1H025	6	25171900	3446
J063	3	1H022	5	1H022	11	25171900	3446
J063	3	1H023	5	1H023	11	25171900	3446
J063	3	1H026	4	1H023	5	25171900	3446
J063	3	1H026	8	1H022	5	25171900	3446
J063	3	1H028	1	1H026	4	25171900	3446
J063	3	1H028	2	1H026	8	25171900	3446
J064	3	1H024	5	1H024	11	25171900	3446
J064	2	1H025	11	1H026	12	25171900	3446
J064	3	1H025	5	1H025	11	25171900	3446
J064	3	1H027	4	1H024	5	25171900	3446
J064	3	1H028	7	1H027	4	25171900	3446
J064	3	1H028	8	1H025	5	25171900	3446
J065	2	1H027	5	1H028	6	25171900	3446
J066	3	1H027	9	1H028	12	25171900	3446
J067	3	1H028	5	1H027	12	25171900	3446
J067	3	1H028	11	1H027	8	25171900	3446
J067	3	1H029	1	1H028	5	25171900	3446
J067	3	1H029	2	1H028	11	25171900	3446
J068	7	1H016	7	1H029	6	25171900	3446
J070	6	1H016	12	1H007	5	25171900	3446
J070	7	1H029	5	1H016	6	25171900	3446
J070	3	1H030	1	1H029	5	25171900	3446
J070	8	1H030	1	1H045	12	25171900	3446
J070	8	1H030	2	1H016	12	25171900	3446
J070	8	1H030	2	1H045	11	25171900	3446
J070	4	1H030	3	1GND		25171900	3446
J071	12	1H030	8	1H009	9	25171900	3446
J071	26	1H030	7	1J088	8	25171900	3446
J071	7	1H030	9	1H043	5	25171900	3446
J071	4	1H043	5	1H037	4	25171900	3446
J071	15	1H037	4	1G006	4	25171900	3446
J073	2	1H049	7	1H049	6	25171900	3446
J073	5	1H049	9	1GND		25171900	3446
J073	9	1H049	6	1H030	5	25171900	3446
J073	9	1H049	8	1H031	4	25171900	3446
J074	3	1H056	2	1H052	6	25171900	3446
J074	4	1H056	1	1H051	6	25171900	3446
J074	5	1H056	3	1GND		25171900	3446
J074	6	1H056	3	1J050	6	25171900	3446
J074	16	1H056	1	1J086	5	25171900	3446
J074	16	1H056	2	1J086	4	25171900	3446
J075	13	1G007	1	1H031	11	25171900	3446
J075	19	1G007	3	1H047	12	25171900	3446
J075	32	1G007	2	1J075	10	25171900	3446
J076	4	1H057	1	1H056	11	25171900	3446
J077	12	1G009	1	1H031	9	25171900	3446
J077	18	1G009	3	1H047	11	25171900	3446
J077	31	1G009	2	1J075	11	25171900	3446
J078	2	1H057	7	1H057	5	25171900	3446
J079	11	1J014	7	1H030	6	25171900	3446
J080	4	1H035	1	1H033	10	25171900	3446
J080	13	1H035	2	1H008	5	25171900	3446
J080	13	1H035	3	1H007	11	25171900	3446
J082	5	1H045	1	1H037	3	25171900	3446
J082	5	1H045	2	1H038	12	25171900	3446

J083	5	1H047	2	1H038	6	25171900	3446
J083	6	1H047	1	1H036	6	25171900	3446
J083	9	1H047	3	1H030	11	25171900	3446
J084	3	1H046	1	1H043	6	25171900	3446
J084	3	1H046	2	1H044	6	25171900	3446
J084	8	1H046	3	1H030	10	25171900	3446
J085	6	1H048	1	1H037	11	25171900	3446
J085	6	1H048	2	1H038	5	25171900	3446
J086	3	1H047	7	1H047	4	25171900	3446
J086	5	1H047	8	1GND		25171900	3446
J086	5	1H047	9	1GND		25171900	3446
J086	17	1J017	12	1H047	4	25171900	3446
J087	11	1J070	12	1J049	7	25171900	3446
J087	2	1J071	12	1J070	11	25171900	3446
J087	12	1J071	11	1J046	10	25171900	3446
J087	4	1J074	1	1J070	12	25171900	3446
J087	4	1J074	2	1J071	12	25171900	3446
J087	4	1J074	3	1J071	11	25171900	3446
J088	27	1J074	6	1G015	4	25171900	3446
J088	3	1J075	1	1J074	6	25171900	3446
J088	15	1J075	2	1H054	10	25171900	3446
J089	2	1J075	7	1J075	6	25171900	3446
J089	5	1J075	8	1GND		25171900	3446
J090	12	1J069	2	1H047	10	25171900	3446
J090	18	1J069	1	1H031	8	25171900	3446
J100	6	1I010	1	1I001	6	25171900	3446
J101	6	1I010	7	1I001	12	25171900	3446
J102	5	1I011	1	1I002	5	25171900	3446
J103	6	1I011	7	1I002	12	25171900	3446
J104	6	1I012	1	1I003	5	25171900	3446
J105	6	1I012	7	1I003	11	25171900	3446
J106	6	1I013	1	1I004	5	25171900	3446
J107	6	1I013	7	1I004	11	25171900	3446
J108	6	1I014	1	1I005	4	25171900	3446
J109	6	1I014	7	1I005	11	25171900	3446
J110	6	1I015	1	1I006	5	25171900	3446
J111	6	1I015	7	1I006	11	25171900	3446
J112	6	1I016	1	1I007	6	25171900	3446
J113	12	1I031	1	1I007	12	25171900	3446
J114	11	1I031	7	1I008	6	25171900	3446
J114	12	1I031	7	1I056	12	25171900	3446
J115	12	1I032	1	1I008	12	25171900	3446
J115	18	1I032	1	1D050	4	25171900	3446
J116	3	1I029	7	1I031	6	25171900	3446
J116	5	1I029	8	1GND		25171900	3446
J116	3	1I031	6	1I031	12	25171900	3446
J117	11	1I032	7	1I009	6	25171900	3446
J117	11	1I032	7	1I056	11	25171900	3446
J118	14	1I033	1	1I063	12	25171900	3446
J120	5	1I017	1	1I010	5	25171900	3446
J121	5	1I017	7	1I010	11	25171900	3446
J122	5	1I018	1	1I011	5	25171900	3446
J123	5	1I018	7	1I011	11	25171900	3446
J124	5	1I019	1	1I012	5	25171900	3446
J125	5	1I019	7	1I012	11	25171900	3446
J128	4	1I020	1	1I014	5	25171900	3446
J129	4	1I020	7	1I014	9	25171900	3446
J130	4	1I021	1	1I015	3	25171900	3446
J131	4	1I021	7	1I015	9	25171900	3446
J132	2	1I033	7	1I032	6	25171900	3446
J133	4	1I034	1	1I031	10	25171900	3446
J134	15	1I064	7	1I032	4	25171900	3446
J135	14	1G006	7	1I031	5	25171900	3446

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J136	3	1J042	7	1J041	12	25171900	3446
J136	5	1J042	8	1GND		25171900	3446
J140	22	1J051	1	1I001	3	25171900	3446
J141	22	1J051	7	1I001	9	25171900	3446
J142	22	1J052	1	1I002	3	25171900	3446
J143	2	1J052	7	1J052	6	25171900	3446
J150	6	1I010	4	1I001	11	25171900	3446
J150	6	1I010	10	1I001	5	25171900	3446
J150	2	1I011	3	1I010	4	25171900	3446
J150	3	1I011	4	1I010	10	25171900	3446
J150	6	1I022	1	1I011	4	25171900	3446
J150	6	1I022	2	1I011	3	25171900	3446
J151	3	1I001	4	1I001	10	25171900	3446
J151	5	1I010	3	1I002	4	25171900	3446
J151	3	1I010	9	1I010	3	25171900	3446
J151	9	1I018	5	1I001	4	25171900	3446
J151	7	1I022	7	1I010	9	25171900	3446
J151	4	1I022	8	1I018	5	25171900	3446
J152	5	1I011	10	1I003	4	25171900	3446
J152	3	1I012	4	1I012	10	25171900	3446
J152	2	1I012	9	1I011	10	25171900	3446
J152	6	1I012	10	1I002	11	25171900	3446
J152	6	1I023	1	1I012	4	25171900	3446
J152	6	1I023	2	1I012	9	25171900	3446
J153	3	1I003	3	1I003	9	25171900	3446
J153	2	1I003	9	1I002	10	25171900	3446
J153	5	1I011	9	1I003	10	25171900	3446
J153	3	1I012	3	1I011	9	25171900	3446
J153	6	1I023	7	1I012	3	25171900	3446
J153	10	1I023	8	1I003	3	25171900	3446
J154	6	1I013	5	1I004	10	25171900	3446
J154	6	1I013	11	1I004	4	25171900	3446
J154	2	1I014	3	1I013	5	25171900	3446
J154	3	1I014	4	1I013	11	25171900	3446
J154	6	1I024	1	1I014	4	25171900	3446
J154	6	1I024	2	1I014	3	25171900	3446
J155	3	1I004	3	1I004	9	25171900	3446
J155	5	1I013	4	1I005	3	25171900	3446
J155	3	1I013	10	1I013	4	25171900	3446
J155	8	1I020	6	1I004	3	25171900	3446
J155	6	1I024	7	1I013	10	25171900	3446
J155	3	1I024	8	1I020	6	25171900	3446
J156	5	1I014	11	1I006	4	25171900	3446
J156	3	1I015	5	1I015	10	25171900	3446
J156	6	1I015	10	1I005	10	25171900	3446
J156	2	1I015	11	1I014	11	25171900	3446
J156	6	1I025	1	1I015	5	25171900	3446
J156	6	1I025	2	1I015	11	25171900	3446
J157	3	1I006	3	1I006	9	25171900	3446
J157	2	1I006	9	1I005	9	25171900	3446
J157	5	1I014	10	1I006	10	25171900	3446
J157	3	1I015	4	1I014	10	25171900	3446
J157	6	1I025	7	1I015	4	25171900	3446
J157	9	1I025	8	1I006	3	25171900	3446
J158	3	1I022	6	1I022	12	25171900	3446
J158	3	1I026	1	1I022	6	25171900	3446
J159	3	1I023	6	1I023	12	25171900	3446
J159	3	1I026	5	1I023	6	25171900	3446
J160	3	1I024	6	1I024	12	25171900	3446
J160	3	1I026	9	1I024	6	25171900	3446
J161	3	1I025	6	1I025	12	25171900	3446
J161	3	1I027	1	1I025	6	25171900	3446

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REV. J

J163	3	1I022	11	1I022	5	25171900	3446
J163	3	1I023	5	1I023	11	25171900	3446
J163	3	1I026	4	1I023	5	25171900	3446
J163	3	1I026	8	1I022	11	25171900	3446
J163	3	1I028	1	1I026	8	25171900	3446
J163	3	1I028	2	1I026	4	25171900	3446
J164	3	1I024	5	1I024	11	25171900	3446
J164	3	1I025	11	1I025	5	25171900	3446
J164	2	1I026	12	1I025	11	25171900	3446
J164	3	1I027	4	1I024	5	25171900	3446
J164	3	1I028	7	1I027	4	25171900	3446
J164	3	1I028	8	1I026	12	25171900	3446
J165	2	1I027	5	1I028	6	25171900	3446
J166	3	1I027	9	1I028	12	25171900	3446
J167	3	1I028	5	1I027	12	25171900	3446
J167	3	1I028	11	1I027	8	25171900	3446
J167	3	1I029	1	1I028	5	25171900	3446
J167	3	1I029	2	1I028	11	25171900	3446
J168	7	1I016	7	1I029	6	25171900	3446
J170	6	1I016	12	1I007	5	25171900	3446
J170	7	1I029	5	1I016	6	25171900	3446
J170	3	1I030	1	1I029	5	25171900	3446
J170	8	1I030	1	1I045	12	25171900	3446
J170	8	1I030	2	1I016	12	25171900	3446
J170	8	1I030	2	1I045	11	25171900	3446
J171	3	1I030	7	1I029	11	25171900	3446
J171	7	1I030	7	1I043	5	25171900	3446
J171	16	1I030	8	1E048	8	25171900	3446
J171	2	1I043	5	1I044	4	25171900	3446
J173	9	1I049	6	1I030	5	25171900	3446
J173	2	1I049	7	1I049	6	25171900	3446
J173	9	1I049	8	1I031	4	25171900	3446
J173	5	1I049	9	1GND		25171900	3446
J174	4	1I056	1	1I051	6	25171900	3446
J174	8	1I056	2	1G062	5	25171900	3446
J174	3	1I056	2	1I052	6	25171900	3446
J174	5	1I056	3	1I050	12	25171900	3446
J175	14	1G008	1	1I031	11	25171900	3446
J175	5	1G008	2	1G015	9	25171900	3446
J175	19	1G008	3	1I047	12	25171900	3446
J176	3	1I057	1	1I056	10	25171900	3446
J177	13	1G010	1	1I031	9	25171900	3446
J177	4	1G010	2	1G015	8	25171900	3446
J177	19	1G010	3	1I047	11	25171900	3446
J178	2	1I057	7	1I057	5	25171900	3446
J179	9	1J015	7	1I030	6	25171900	3446
J180	13	1I035	1	1I007	11	25171900	3446
J180	13	1I035	2	1I008	5	25171900	3446
J180	3	1I035	3	1I033	11	25171900	3446
J182	5	1I045	1	1I037	3	25171900	3446
J182	5	1I045	2	1I038	12	25171900	3446
J183	6	1I047	1	1I036	6	25171900	3446
J183	6	1I047	2	1I038	6	25171900	3446
J183	9	1I047	3	1I030	11	25171900	3446
J184	3	1I046	1	1I043	6	25171900	3446
J184	3	1I046	2	1I044	5	25171900	3446
J184	9	1I046	3	1I030	10	25171900	3446
J185	6	1I048	1	1I038	5	25171900	3446
J185	6	1I048	2	1I037	11	25171900	3446
J186	3	1I047	7	1I047	4	25171900	3446
J186	5	1I047	8	1GND		25171900	3446
J186	5	1I047	9	1GND		25171900	3446

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REV. J

J200	27	1G014	1	1F076	12	25171900	3446
J200	22	1G014	1	1I059	6	25171900	3446
J200	5	1G014	2	1GND		25171900	3446
J500	15	1J046	1	1H017	5	25171900	3446
J500	15	1J046	2	1H017	11	25171900	3446
J500	15	1J046	3	1H018	4	25171900	3446
J501	18	1J046	7	1H010	2	25171900	3446
J501	15	1J046	8	1H017	10	25171900	3446
J501	15	1J046	9	1H018	3	25171900	3446
J502	15	1J047	1	1H017	4	25171900	3446
J502	18	1J047	2	1H010	8	25171900	3446
J502	15	1J047	3	1H018	2	25171900	3446
J503	3	1J047	7	1J044	5	25171900	3446
J503	3	1J047	8	1J044	12	25171900	3446
J503	3	1J047	9	1J045	12	25171900	3446
J504	16	1J048	1	1H017	3	25171900	3446
J504	16	1J048	2	1H017	9	25171900	3446
J504	3	1J048	3	1J045	5	25171900	3446
J505	3	1J048	7	1J044	4	25171900	3446
J505	16	1J048	8	1H017	8	25171900	3446
J505	3	1J048	9	1J045	4	25171900	3446
J510	16	1J049	1	1H018	11	25171900	3446
J510	16	1J049	2	1H019	5	25171900	3446
J510	15	1J049	3	1H019	12	25171900	3446
J511	3	1J044	6	1J044	11	25171900	3446
J511	3	1J045	3	1J044	6	25171900	3446
J511	12	1J070	1	1J045	3	25171900	3446
J512	2	1J070	7	1J070	6	25171900	3446
J520	16	1J050	1	1H018	10	25171900	3446
J520	18	1J050	2	1H012	2	25171900	3446
J520	15	1J050	3	1H019	11	25171900	3446
J521	2	1H012	8	1H011	8	25171900	3446
J521	5	1H019	6	1H012	8	25171900	3446
J521	23	1J071	1	1H019	6	25171900	3446
J522	2	1J071	7	1J071	6	25171900	3446
J600	17	1J053	1	1I017	5	25171900	3446
J600	17	1J053	2	1I017	11	25171900	3446
J600	17	1J053	3	1I018	4	25171900	3446
J601	20	1J053	7	1I010	2	25171900	3446
J601	17	1J053	8	1I017	10	25171900	3446
J601	18	1J053	9	1I018	3	25171900	3446
J602	17	1J054	1	1I017	4	25171900	3446
J602	20	1J054	2	1I010	8	25171900	3446
J602	17	1J054	3	1I018	2	25171900	3446
J603	3	1J054	7	1J051	5	25171900	3446
J603	3	1J054	8	1J051	12	25171900	3446
J603	3	1J054	9	1J052	12	25171900	3446
J604	17	1J055	1	1I017	3	25171900	3446
J604	17	1J055	2	1I017	9	25171900	3446
J604	3	1J055	3	1J052	5	25171900	3446
J605	3	1J055	7	1J051	4	25171900	3446
J605	17	1J055	8	1I017	8	25171900	3446
J605	3	1J055	9	1J052	4	25171900	3446
J610	17	1J056	1	1I018	11	25171900	3446
J610	17	1J056	2	1I019	5	25171900	3446
J610	17	1J056	3	1I019	12	25171900	3446
J620	18	1J057	1	1I018	10	25171900	3446
J620	20	1J057	2	1I012	2	25171900	3446
J620	17	1J057	3	1I019	11	25171900	3446
J700	12	1J023	7	1G009	12	25171900	3446
J700	12	1J023	7	1J050	12	25171900	3446
J700	12	1J023	8	1G010	12	25171900	3446

J700	15	1J023	8	1J057	12	25171900	3446
J700	5	1J057	12	1GND		25171900	3446
J701	16	1J058	1	1J023	12	25171900	3446
K002	33	1G004	6	1J077	6	25171900	3446
K002	6	1H008	11	1G004	6	25171900	3446
K002	5	1H036	1	1H029	10	25171900	3446
K002	4	1H036	1	1H039	11	25171900	3446
K002	4	1H036	2	1H033	12	25171900	3446
K002	4	1H036	2	1H039	12	25171900	3446
K002	13	1H036	3	1H008	11	25171900	3446
K002	3	1H036	3	1H038	4	25171900	3446
K002	2	1H038	4	1H039	5	25171900	3446
K002	2	1H039	5	1H040	4	25171900	3446
K002	9	1H039	12	1H056	10	25171900	3446
K002	16	1H040	4	1C047	10	25171900	3446
K002	12	1H056	10	1F074	6	25171900	3446
K002	5	1H034-11		1H039-11			
K003	9	1H036	7	1F036	5	25171900	3446
K003	3	1H036	7	1H038	11	25171900	3446
K003	5	1H036	8	1GND		25171900	3446
K003	5	1H036	9	1GND		25171900	3446
K003	11	1H038	11	1J020	5	25171900	3446
K004	4	1H037	1	1H041	6	25171900	3446
K005	4	1H037	7	1H041	12	25171900	3446
K006	4	1H038	1	1H042	6	25171900	3446
K007	4	1H038	7	1H042	12	25171900	3446
K008	5	1H039	1	1H035	12	25171900	3446
K009	3	1H038	3	1H037	9	25171900	3446
K009	3	1H039	7	1H038	3	25171900	3446
K010	11	1H030	4	1H007	10	25171900	3446
K010	8	1H045	10	1H030	4	25171900	3446
K010	4	1H049	5	1H045	10	25171900	3446
K010	3	1H051	1	1H049	5	25171900	3446
K010	5	1H051	2	1GND		25171900	3446
K011	3	1H049	12	1H045	9	25171900	3446
K011	3	1H051	7	1H049	12	25171900	3446
K011	17	1H051	8	1J087	4	25171900	3446
K012	6	1H047	6	1J050	11	25171900	3446
K012	4	1H051	12	1H047	6	25171900	3446
K012	4	1H052	1	1H051	12	25171900	3446
K012	5	1H052	2	1GND		25171900	3446
K012	5	1H052	3	1GND		25171900	3446
K013	4	1H049	11	1H045	6	25171900	3446
K013	3	1H052	7	1H049	11	25171900	3446
K013	17	1H052	8	1J087	3	25171900	3446
K013	18	1H052	9	1J088	12	25171900	3446
K014	5	1H040	5	1H033	11	25171900	3446
K014	3	1H043	10	1H040	5	25171900	3446
K014	2	1H044	10	1H043	10	25171900	3446
K014	17	1H046	6	1H008	4	25171900	3446
K014	18	1H046	10	1H007	9	25171900	3446
K014	6	1H053	1	1H044	10	25171900	3446
K014	3	1H053	1	1H056	9	25171900	3446
K014	5	1H053	2	1H046	10	25171900	3446
K014	3	1H053	2	1H056	8	25171900	3446
K014	5	1H053	3	1H046	6	25171900	3446
K014	3	1H053	3	1H056	7	25171900	3446
K014	12	1H056	7	1J075	5	25171900	3446
K015	9	1H053	7	1H035	11	25171900	3446
K015	5	1H053	8	1GND		25171900	3446
K015	5	1H053	9	1GND		25171900	3446
K016	5	1H047	5	1H054	2	25171900	3446
K016	5	1H054	1	1H046	9	25171900	3446

K016	3	1H054	1	1H055	6	25171900	3446
K016	19	1H047	5	1H008	3	25171900	3446
K016	13	1H054	2	1J075	12	25171900	3446
K016	6	1H055	6	1I052	11	25171900	3446
K016	5	1I052	11	1GND		25171900	3446
K017	10	1H054	7	1H035	10	25171900	3446
K017	5	1H054	8	1GND		25171900	3446
K019	5	1H043	1	1H036	4	25171900	3446
K020	5	1H044	1	1H037	8	25171900	3446
K021	4	1H055	1	1H051	5	25171900	3446
K022	5	1H043	7	1H036	10	25171900	3446
K023	3	1H055	7	1H052	4	25171900	3446
K024	9	1J066	1	1H055	10	25171900	3446
K025	5	1H044	7	1H037	2	25171900	3446
K026	4	1H034	7	1H038	10	25171900	3446
K027	13	1J028	1	1H051	4	25171900	3446
K030	12	1H032	5	1H008	9	25171900	3446
K030	4	1H038	2	1H032	5	25171900	3446
K030	3	1H040	1	1H038	2	25171900	3446
K030	4	1H040	1	1H043	12	25171900	3446
K030	5	1H040	2	1GND		25171900	3446
K030	5	1H040	3	1GND		25171900	3446
K031	18	1G011	8	1H048	6	25171900	3446
K031	13	1H038	9	1G012	7	25171900	3446
K031	3	1H040	7	1H038	9	25171900	3446
K031	3	1H040	7	1H043	4	25171900	3446
K031	14	1H040	8	1G011	8	25171900	3446
K031	14	1H040	9	1G011	6	25171900	3446
K031	18	1H040	9	1J078	5	25171900	3446
K032	7	1H046	12	1H034	5	25171900	3446
K032	7	1J046	4	1H046	12	25171900	3446
K032	4	1J049	8	1J046	4	25171900	3446
K032	17	1J086	1	1J049	8	25171900	3446
K033	3	1J086	6	1J085	4	25171900	3446
K033	3	1J087	1	1J086	6	25171900	3446
K102	9	1I008	9	1G004	4	25171900	3446
K102	5	1I036	1	1I029	10	25171900	3446
K102	4	1I036	1	1I039	11	25171900	3446
K102	3	1I036	2	1I033	9	25171900	3446
K102	4	1I036	2	1I039	12	25171900	3446
K102	13	1I036	3	1I008	9	25171900	3446
K102	3	1I036	3	1I038	2	25171900	3446
K102	3	1I038	2	1I039	5	25171900	3446
K102	2	1I039	5	1I040	5	25171900	3446
K102	9	1I039	12	1I056	9	25171900	3446
K102	20	1I040	5	1C047	9	25171900	3446
K102	14	1I056	9	1F074	4	25171900	3446
K103	12	1I036	7	1F036	4	25171900	3446
K103	3	1I036	7	1I038	11	25171900	3446
K103	5	1I036	8	1GND		25171900	3446
K103	5	1I036	9	1GND		25171900	3446
K103	10	1I038	11	1J019	5	25171900	3446
K104	4	1I037	1	1I041	6	25171900	3446
K105	4	1I037	7	1I041	12	25171900	3446
K106	4	1I038	1	1I042	6	25171900	3446
K107	4	1I038	7	1I042	12	25171900	3446
K108	4	1I039	1	1I035	12	25171900	3446
K109	3	1I038	4	1I037	9	25171900	3446
K109	3	1I039	7	1I038	4	25171900	3446
K110	11	1I030	4	1I007	9	25171900	3446
K110	8	1I045	10	1I030	4	25171900	3446
K110	4	1I049	5	1I045	10	25171900	3446

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K110	3	1I051	1	1I049	5	25171900	3446
K110	5	1I051	2	1GND		25171900	3446
K111	3	1I049	12	1I045	9	25171900	3446
K111	3	1I051	7	1I049	12	25171900	3446
K111	19	1I051	8	1I009	11	25171900	3446
K112	3	1I050	5	1I047	6	25171900	3446
K112	3	1I051	12	1I050	5	25171900	3446
K112	4	1I052	1	1I051	12	25171900	3446
K112	5	1I052	2	1GND		25171900	3446
K112	5	1I052	3	1GND		25171900	3446
K113	2	1D050	6	1D050	5	25171900	3446
K113	7	1I046	12	1I034	5	25171900	3446
K113	5	1I052	7	1J053	4	25171900	3446
K113	18	1I052	8	1D050	6	25171900	3446
K113	19	1I052	8	1I009	12	25171900	3446
K113	17	1I052	9	1J088	11	25171900	3446
K113	4	1J053	4	1J056	8	25171900	3446
K113	7	1J056	8	1I046	12	25171900	3446
K114	7	1I008	4	1J015	6	25171900	3446
K114	5	1I040	4	1I033	12	25171900	3446
K114	3	1I043	10	1I040	4	25171900	3446
K114	2	1I044	10	1I043	10	25171900	3446
K114	17	1I046	6	1I008	4	25171900	3446
K114	17	1I046	10	1I007	10	25171900	3446
K114	6	1I053	1	1I044	10	25171900	3446
K114	4	1I053	1	1I056	8	25171900	3446
K114	5	1I053	2	1I046	10	25171900	3446
K114	4	1I053	2	1I056	7	25171900	3446
K114	5	1I053	3	1I046	6	25171900	3446
K114	3	1I053	3	1I056	6	25171900	3446
K115	9	1I053	7	1I035	11	25171900	3446
K115	5	1I053	8	1GND		25171900	3446
K115	5	1I053	9	1GND		25171900	3446
K116	6	1H052	11	1I046	9	25171900	3446
K116	8	1I008	3	1G015	10	25171900	3446
K116	17	1I046	11	1I008	3	25171900	3446
K116	4	1I054	1	1H052	11	25171900	3446
K116	3	1I054	1	1I055	6	25171900	3446
K116	5	1I054	2	1I046	11	25171900	3446
K117	10	1I054	7	1I035	10	25171900	3446
K117	5	1I054	8	1GND		25171900	3446
K119	5	1I043	1	1I036	4	25171900	3446
K120	5	1I044	1	1I037	8	25171900	3446
K121	4	1I055	1	1I051	5	25171900	3446
K122	5	1I043	7	1I036	10	25171900	3446
K123	3	1I055	7	1I052	4	25171900	3446
K125	5	1I044	7	1I037	2	25171900	3446
K126	4	1I034	7	1I038	10	25171900	3446
K127	12	1J028	7	1I051	4	25171900	3446
K130	12	1I032	5	1I008	11	25171900	3446
K130	4	1I038	3	1I032	5	25171900	3446
K130	3	1I040	1	1I038	3	25171900	3446
K130	4	1I040	1	1I043	12	25171900	3446
K130	5	1I040	2	1GND		25171900	3446
K131	14	1I038	9	1G012	6	25171900	3446
K131	3	1I040	7	1I038	9	25171900	3446
K131	3	1I040	7	1I043	4	25171900	3446
K131	15	1I040	8	1G011	7	25171900	3446
K131	5	1I040	8	1I048	5	25171900	3446
K200	21	1H051	10	1G006	5	25171900	3446
K200	4	1I050	1	1H051	10	25171900	3446
K200	3	1I050	1	1I052	5	25171900	3446

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K201	21	1H052	5	1G006	11	25171900	3446
K201	6	1I050	7	1H052	5	25171900	3446
K201	3	1I050	7	1I051	10	25171900	3446
K202	22	1G001	1	1J046	5	25171900	3446
K202	5	1G001	2	1G008	12	25171900	3446
K202	5	1G001	2	1GND		25171900	3446
K202	5	1G001	3	1GND		25171900	3446
K202	22	1G008	12	1J053	5	25171900	3446
K202	4	1J046	5	1J050	11	25171900	3446
K202	9	1J050	11	1J069	6	25171900	3446
K202	4	1J053	5	1J057	11	25171900	3446
K203	23	1G001	7	1J046	12	25171900	3446
K203	5	1G001	8	1G008	11	25171900	3446
K203	5	1G001	8	1GND		25171900	3446
K203	16	1G001	9	1J029	6	25171900	3446
K203	22	1G008	11	1J053	12	25171900	3446
K203	3	1J046	12	1J050	10	25171900	3446
K203	9	1J050	10	1J069	5	25171900	3446
K203	3	1J053	12	1J057	10	25171900	3446
K204	4	1G002	1	1G007	10	25171900	3446
K204	5	1G002	2	1G008	10	25171900	3446
K204	5	1G002	2	1GND		25171900	3446
K204	5	1G002	3	1GND		25171900	3446
K204	20	1G007	10	1J047	5	25171900	3446
K204	22	1G008	10	1J054	5	25171900	3446
K204	3	1J047	5	1J050	9	25171900	3446
K204	3	1J054	5	1J057	9	25171900	3446
K205	4	1G002	7	1G007	9	25171900	3446
K205	4	1G002	8	1G008	9	25171900	3446
K205	5	1G002	8	1GND		25171900	3446
K205	16	1G002	9	1J029	5	25171900	3446
K205	20	1G007	9	1J047	12	25171900	3446
K205	22	1G008	9	1J054	12	25171900	3446
K205	3	1J047	12	1J050	8	25171900	3446
K205	3	1J054	12	1J057	8	25171900	3446
K206	4	1G003	1	1G007	8	25171900	3446
K206	4	1G003	2	1G008	8	25171900	3446
K206	5	1G003	2	1GND		25171900	3446
K206	5	1G003	3	1GND		25171900	3446
K206	20	1G007	8	1J048	5	25171900	3446
K206	23	1G008	8	1J055	5	25171900	3446
K206	3	1J048	5	1J050	7	25171900	3446
K206	3	1J055	5	1J057	7	25171900	3446
K207	3	1G003	7	1G007	7	25171900	3446
K207	4	1G003	8	1G008	7	25171900	3446
K207	5	1G003	8	1GND		25171900	3446
K207	16	1G003	9	1J029	4	25171900	3446
K207	21	1G007	7	1J048	11	25171900	3446
K207	23	1G008	7	1J055	11	25171900	3446
K207	3	1J048	11	1J050	6	25171900	3446
K207	3	1J055	11	1J057	6	25171900	3446
K208	4	1G004	1	1G009	10	25171900	3446
K208	5	1G004	2	1G010	10	25171900	3446
K208	5	1G004	2	1GND		25171900	3446
K208	5	1G004	3	1GND		25171900	3446
K208	19	1G009	10	1J046	11	25171900	3446
K208	22	1G010	10	1J053	11	25171900	3446
K208	3	1J046	11	1J049	11	25171900	3446
K208	3	1J053	11	1J056	11	25171900	3446
K209	4	1G004	7	1G009	9	25171900	3446
K209	4	1G004	8	1G010	9	25171900	3446
K209	5	1G004	8	1GND		25171900	3446

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K209	15	1G004	9	1J029	3		
*219	20	1G009	9	1J047	4	25171900	3446
*219	22	1G010	9	1J054	4	25171900	3446
*219	4	1J047	4	1J049	10	25171900	3446
*219	3	1J054	4	1J056	10	25171900	3446
*212	5	1G011	1	1G004	11	25171900	3446
*213	5	1G012	1	1G004	5	25171900	3446
*214	4	1G005	1	1G009	8	25171900	3446
*214	4	1G005	2	1G010	8	25171900	3446
*214	5	1G005	2	1GND		25171900	3446
*214	20	1G009	8	1J048	4	25171900	3446
*214	22	1G010	8	1J055	4	25171900	3446
*214	3	1J048	4	1J049	9	25171900	3446
*214	3	1J055	4	1J056	9	25171900	3446
*215	5	1G005	7	1G013	12	25171900	3446
*215	21	1G005	8	1E048	10	25171900	3446
*215	11	1G013	12	1J018	7	25171900	3446
*216	5	1G013	1	1G005	12	25171900	3446
*216	5	1G013	2	1G005	11	25171900	3446
*216	16	1G013	1	1H048	5	25171900	3446
*216	18	1G013	2	1I048	6	25171900	3446
*216	6	1H048	5	1H057	9	25171900	3446
*216	6	1I048	6	1I057	9	25171900	3446
*216	5	1I057	9	1GND		25171900	3446
*217	5	1G013	7	1G005	6	25171900	3446
*217	17	1G013	8	1E048	11	25171900	3446
*217	27	1G013	7	1F075	5	25171900	3446
*218	3	1J059	1	1J060	6	25171900	3446
*218	5	1J059	2	1GND		25171900	3446
*218	2	1J060	6	1J061	6	25171900	3446
*218	2	1J061	6	1J062	6	25171900	3446
*219	12	1H034	4	1J049	5	25171900	3446
*219	5	1I051	11	1GND		25171900	3446
*219	5	1I057	3	1I050	4	25171900	3446
*219	12	1J049	5	1J070	10	25171900	3446
*219	6	1J059	8	1I051	11	25171900	3446
*219	6	1J059	8	1I057	3	25171900	3446
*219	9	1J059	7	1H051	11	25171900	3446
*219	15	1J059	7	1H034	4	25171900	3446
*220	15	1F050	7	1J049	12	25171900	3446
*220	15	1F050	8	1J056	12	25171900	3446
*220	17	1F050	9	1E015	11	25171900	3446
*220	18	1F050	7	1G009	11	25171900	3446
*220	18	1F050	8	1G010	11	25171900	3446
*220	2	1J049	12	1J048	12	25171900	3446
*220	5	1J055	12	1GND		25171900	3446
*220	2	1J056	12	1J055	12	25171900	3446
*221	14	1J029	1	1J059	12	25171900	3446
*221	15	1J059	12	1F050	12	25171900	3446
*222	3	1F074	5	1F076	11	25171900	3446
*222	3	1F076	11	1F079	12	25171900	3446
*222	21	1J043	6	1G001	12	25171900	3446
*222	5	1J060	2	1GND		25171900	3446
*222	5	1J060	3	1GND		25171900	3446
*222	9	1J060	1	1J043	6	25171900	3446
*222	15	1J060	1	1F074	5	25171900	3446
*223	4	1J050	5	1J046	6	25171900	3446
*223	22	1J053	6	1G010	7	25171900	3446
*223	4	1J058	11	1J053	6	25171900	3446
*223	3	1J060	9	1J058	11	25171900	3446
*223	5	1J060	9	1GND		25171900	3446
*223	6	1J060	8	1J050	5	25171900	3446

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*223	6	1J060	8	1J069	4	25171900	3446
*223	27	1J060	7	1G001	6	25171900	3446
*224	7	1G002	11	1G014	6	25171900	3446
*224	20	1J043	5	1E064	6	25171900	3446
*224	5	1J061	3	1GND		25171900	3446
*224	9	1J061	1	1J043	5	25171900	3446
*224	17	1J061	2	1E064	5	25171900	3446
*224	27	1J061	1	1G002	12	25171900	3446
*224	27	1J061	2	1G002	11	25171900	3446
*225	20	1J047	6	1G009	6	25171900	3446
*225	22	1J054	6	1G010	6	25171900	3446
*225	4	1J058	9	1J054	6	25171900	3446
*225	7	1J058	10	1J047	6	25171900	3446
*225	3	1J061	8	1J058	10	25171900	3446
*225	3	1J061	9	1J058	9	25171900	3446
*225	5	1J061	9	1GND		25171900	3446
*225	27	1J061	7	1G002	6	25171900	3446
*226	7	1G003	12	1G014	5	25171900	3446
*226	5	1J062	2	1GND		25171900	3446
*226	5	1J062	3	1GND		25171900	3446
*226	17	1J062	1	1E064	4	25171900	3446
*226	27	1J062	1	1G003	12	25171900	3446
*227	21	1J048	6	1G009	5	25171900	3446
*227	22	1J055	6	1G010	5	25171900	3446
*227	3	1J058	7	1J055	6	25171900	3446
*227	7	1J058	8	1J048	6	25171900	3446
*227	3	1J062	8	1J058	8	25171900	3446
*227	3	1J062	9	1J058	7	25171900	3446
*227	5	1J062	9	1GND		25171900	3446
*227	27	1J062	7	1G003	6	25171900	3446
*228	5	1G013	9	1G005	9	25171900	3446
*228	5	1J023	2	1GND		25171900	3446
*228	11	1J023	1	1G013	9	25171900	3446
*229	20	1J047	11	1G009	7	25171900	3446
*229	3	1J049	6	1J047	11	25171900	3446
*229	5	1J083	2	1GND		25171900	3446
*229	15	1J083	1	1J049	6	25171900	3446
*229	2	1J083	7	1J084	6	25171900	3446
*229	5	1J083	8	1GND		25171900	3446
*229	3	1J081	9	1J083	6	25171900	3446
*310	6	1H045	8	1H033	9	25171900	3446
*310	4	1H050	1	1H045	8	25171900	3446
*310	5	1H050	2	1GND		25171900	3446
*310	6	1H050	2	1H045	8	25171900	3446
*310	6	1H045	8	1H033	10	25171900	3446
*311	4	1H050	7	1H046	7	25171900	3446
*311	5	1H050	8	1GND		25171900	3446
*311	5	1H050	8	1H046	7	25171900	3446
*312	8	1E064	7	1E050	5	25171900	3446
*312	8	1E064	7	1G063	4	25171900	3446
*312	9	1G063	4	1H050	12	25171900	3446
*314	5	1H057	11	1GND		25171900	3446
*314	4	1J021	9	1J019	4	25171900	3446
*314	4	1J021	10	1J018	4	25171900	3446
*314	9	1J041	11	1H057	11	25171900	3446
*314	10	1J041	5	1H057	11	25171900	3446
*314	3	1J043	1	1J041	5	25171900	3446
*314	3	1J043	2	1J041	11	25171900	3446
*314	5	1J043	3	1GND		25171900	3446
*314	11	1J043	1	1J021	10	25171900	3446
*314	11	1J043	2	1J021	9	25171900	3446
*315	10	1J042	5	1H057	10	25171900	3446

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K305	10	1J042	11	1I057	10	25171900	3446
K305	2	1J043	7	1J042	5	25171900	3446
K305	3	1J043	8	1J042	11	25171900	3446
K305	5	1J043	8	1GND		25171900	3446
K305	21	1J043	9	1E015	10	25171900	3446
K306	11	1I065	4	1F079	8	25171900	3446
K306	36	1J005	2	1J088	7	25171900	3446
K306	7	1J017	11	1J005	1	25171900	3446
K306	29	1J017	11	1J087	6	25171900	3446
K306	11	1J087	6	1I065	4	25171900	3446
K350	3	1J005	6	1J005	11	25171900	3446
K350	7	1J005	5	1H009	11	25171900	3446
K351	25	1E048	8	1J005	10	25171900	3446
K351	3	1J005	9	1J005	8	25171900	3446
K351	31	1J005	10	1J079	5	25171900	3446
K50J	3	1F027	1	1F026	6	25171900	3446
K50U	3	1F027	1	1F028	5	25171900	3446
K50L	2	1F027	7	1F026	5	25171900	3446
K50L	3	1F027	7	1F028	12	25171900	3446
K50L	2	1F027	12	1F026	12	25171900	3446
K50L	4	1F028	1	1F027	12	25171900	3446
K50L	3	1F027	5	1F026	11	25171900	3446
K50L	2	1F028	7	1F027	5	25171900	3446
K50L	14	1E057	1	1F027	2	25171900	3446
K50U	22	1J064	6	1F025	5	25171900	3446
K50U	3	1J065	1	1J064	6	25171900	3446
K50U	21	1J064	5	1F025	10	25171900	3446
K50L	2	1J065	7	1J064	5	25171900	3446
K50L	23	1F025	1	1J064	12	25171900	3446
K50L	2	1J064	12	1J065	12	25171900	3446
K50L	22	1F025	7	1J064	11	25171900	3446
K50L	3	1J064	11	1J065	6	25171900	3446
L001	15	1G064	1	1C050	3	25171900	3446
L002	15	1G064	5	1C050	7	25171900	3446
L003	15	1G064	9	1C050	11	25171900	3446
L004	15	1G065	1	1C051	3	25171900	3446
L005	15	1G065	5	1C051	7	25171900	3446
L006	15	1G065	9	1C051	11	25171900	3446
L007	15	1G066	1	1C052	3	25171900	3446
L008	15	1G066	5	1C052	7	25171900	3446
L009	15	1G066	9	1C052	11	25171900	3446
L010	15	1G067	1	1C053	3	25171900	3446
L011	15	1G067	5	1C053	7	25171900	3446
L012	15	1G067	9	1C053	11	25171900	3446
L013	15	1G068	1	1C054	3	25171900	3446
L014	15	1G068	5	1C054	7	25171900	3446
L015	15	1G068	9	1C054	11	25171900	3446
L016	15	1G069	1	1C055	3	25171900	3446
L017	15	1G069	5	1C055	7	25171900	3446
L018	15	1G069	9	1C055	11	25171900	3446
L019	15	1G070	1	1C056	3	25171900	3446
L020	15	1G070	5	1C056	7	25171900	3446
L021	15	1G070	9	1C056	11	25171900	3446
L022	15	1G071	1	1C057	3	25171900	3446
L023	15	1G071	5	1C057	7	25171900	3446
L024	15	1G071	9	1C057	11	25171900	3446
L025	15	1G072	1	1C058	3	25171900	3446
L026	15	1G072	5	1C058	7	25171900	3446
L027	15	1G072	9	1C058	11	25171900	3446
L028	15	1G073	1	1C059	3	25171900	3446
L029	15	1G073	5	1C059	7	25171900	3446
L030	15	1G073	9	1C059	11	25171900	3446
L031	15	1G074	1	1C060	3	25171900	3446
L032	15	1G074	5	1C060	7	25171900	3446
L033	15	1G074	9	1C060	11	25171900	3446
L034	15	1G075	1	1C061	3	25171900	3446
L035	15	1G075	5	1C061	7	25171900	3446
L036	15	1G075	9	1C061	11	25171900	3446
L037	15	1G076	1	1C062	3	25171900	3446
L038	15	1G076	5	1C062	7	25171900	3446
L039	15	1G076	9	1C062	11	25171900	3446
L040	15	1G077	1	1C063	3	25171900	3446

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L041	15	1G077	5	1C063	7	25171900	3446
L042	15	1G077	9	1C063	11	25171900	3446
L043	15	1G078	1	1C064	3	25171900	3446
L044	15	1G078	5	1C064	7	25171900	3446
L045	15	1G078	9	1C064	11	25171900	3446
L046	15	1G079	1	1C065	3	25171900	3446
L047	15	1G079	5	1C065	7	25171900	3446
L048	15	1G079	9	1C065	11	25171900	3446
L049	15	1G080	1	1C066	3	25171900	3446
L050	15	1G080	5	1C066	7	25171900	3446
L051	15	1G080	9	1C066	11	25171900	3446
L052	15	1G081	1	1C067	3	25171900	3446
L053	15	1G081	5	1C067	7	25171900	3446
L054	15	1G081	9	1C067	11	25171900	3446
L055	15	1G082	1	1C068	3	25171900	3446
L056	15	1G082	5	1C068	7	25171900	3446
L057	15	1G082	9	1C068	11	25171900	3446
L058	15	1G083	1	1C069	3	25171900	3446
L059	15	1G083	5	1C069	7	25171900	3446
L060	15	1G083	9	1C069	11	25171900	3446
L061	15	1G084	1	1C070	3	25171900	3446
L062	15	1G084	5	1C070	7	25171900	3446
L063	15	1G084	9	1C070	11	25171900	3446
L064	15	1G085	1	1C071	3	25171900	3446
L065	15	1G085	5	1C071	7	25171900	3446
L066	15	1G085	9	1C071	11	25171900	3446
L067	15	1G086	1	1C072	3	25171900	3446
L068	15	1G086	5	1C072	7	25171900	3446
L069	15	1G086	9	1C072	11	25171900	3446
L070	15	1G087	1	1C073	3	25171900	3446
L071	15	1G087	5	1C073	7	25171900	3446
L072	15	1G087	9	1C073	11	25171900	3446
L073	15	1G088	1	1C074	3	25171900	3446
L074	15	1G088	5	1C074	7	25171900	3446
L075	15	1G088	9	1C074	11	25171900	3446
L076	15	1G089	1	1C075	3	25171900	3446
L077	15	1G089	5	1C075	7	25171900	3446
L078	15	1G089	9	1C075	11	25171900	3446
L079	15	1G090	1	1C076	3	25171900	3446
L080	15	1G090	5	1C076	7	25171900	3446
L501	2	1F089	5	1F090	7	25171900	3446
L502	2	1F089	9	1F090	11	25171900	3446
L503	4	1F071	1	1F072	12	25171900	3446
L503	3	1F071	2	1F073	6	25171900	3446
L503	9	1F071	3	1F087	4	25171900	3446
L504	15	1J016	9	1J048	12	25171900	3446
L505	25	1F071	5	1J021	5	25171900	3446
L505	5	1F071	6	1GND		25171900	3446
L505	5	1F071	7	1GND		25171900	3446
L506	19	1F071	9	1H030	12	25171900	3446
L506	5	1F071	10	1GND		25171900	3446
L506	21	1F071	10	1J030	9	25171900	3446
L506	5	1F071	11	1GND		25171900	3446
L507	18	1J016	1	1H055	11	25171900	3446
L508	18	1J016	5	1J055	11	25171900	3446
L509	9	1G090	9	1F076	5	25171900	3446
L510	25	1J030	1	1F077	4	25171900	3446
L511	16	1F089	1	1J083	12	25171900	3446
M503	2	1G063	10	1G062	10	25171900	3446
M504	2	1F088	5	1F089	7	25171900	3446
M504	13	1F088	5	1G062	11	25171900	3446
M505	2	1F088	9	1F089	11	25171900	3446

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N040	13	1F088	9	1G062	12	25171900	3446
N040	21	1E049	2	1H009	10	25171900	3446
N040	24	1E049	3	1J085	12	25171900	3446
N040	25	1E049	1	1J088	10	25171900	3446
N041	3	1E048	1	1E049	6	25171900	3446
N041	27	1E048	1	1J005	7	25171900	3446
N041	27	1E048	2	1J005	3	25171900	3446
N042	15	1E015	7	1E049	5	25171900	3446
N043	3	1J085	9	1J086	3	25171900	3446
N044	2	1J022	2	1J022	4	25171900	3446
N044	2	1J022	4	1J022	6	25171900	3446
N044	2	1J022	6	1J022	8	25171900	3446
N044	29	1J088	1	1J022	2	25171900	3446
N050	5	1C039	2	1GND		25171900	3446
N050	18	1C039	1	1H033	5	25171900	3446
N050	18	1C039	2	1F072	4	25171900	3446
N050	19	1C039	1	1F072	5	25171900	3446
N050	20	1F072	4	1I033	5	25171900	3446
N051	5	1C045	2	1GND		25171900	3446
N051	19	1C045	1	1H044	12	25171900	3446
N051	22	1C045	2	1I044	12	25171900	3446
N051	3	1H034	12	1H033	4	25171900	3446
N051	6	1H044	12	1H034	12	25171900	3446
N051	3	1I034	12	1I033	4	25171900	3446
N051	6	1I044	12	1I034	12	25171900	3446
N052	5	1C045	8	1GND		25171900	3446
N052	18	1C045	7	1H044	11	25171900	3446
N052	21	1C045	8	1I044	11	25171900	3446
N052	6	1H043	11	1H033	3	25171900	3446
N052	2	1H044	11	1H043	11	25171900	3446
N052	6	1I043	11	1I033	3	25171900	3446
N052	2	1I044	11	1I043	11	25171900	3446
N053	3	1C044	1	1C045	6	25171900	3446
N054	3	1C043	1	1C045	5	25171900	3446
N055	4	1C042	1	1C045	12	25171900	3446
N056	4	1C041	1	1C045	11	25171900	3446
N056	6	1C041	3	1C029	5	25171900	3446
N056	6	1C041	4	1C031	5	25171900	3446
N056	7	1C041	2	1C027	5	25171900	3446
N057	12	1C040	1	1F046	5	25171900	3446
N057	12	1C040	2	1F046	4	25171900	3446
N057	18	1C040	1	1H043	3	25171900	3446
N057	21	1C040	2	1I043	3	25171900	3446
N057	5	1F036	9	1GND		25171900	3446
N057	6	1F046	4	1F036	9	25171900	3446
N057	6	1F046	5	1F036	10	25171900	3446
N057	4	1H038	8	1H033	2	25171900	3446
N057	4	1H043	3	1H038	8	25171900	3446
N057	4	1I038	8	1I033	2	25171900	3446
N057	4	1I043	3	1I038	8	25171900	3446
N058	4	1C046	1	1C040	6	25171900	3446
N059	2	1C046	7	1C046	6	25171900	3446
N070	2	1C032	5	1C034	5	25171900	3446
N070	15	1E001	1	1C032	5	25171900	3446
N071	3	1C032	11	1C034	4	25171900	3446
N071	15	1E001	7	1C032	11	25171900	3446
N072	3	1C032	4	1C034	11	25171900	3446
N072	15	1E002	1	1C032	4	25171900	3446
N073	2	1C032	10	1C034	10	25171900	3446
N073	15	1E002	7	1C032	10	25171900	3446
N074	3	1C036	5	1C038	6	25171900	3446
N074	16	1E003	1	1C036	5	25171900	3446
N075	3	1C036	11	1C038	5	25171900	3446
N075	16	1E003	7	1C036	11	25171900	3446

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N076	3	1C036	4	1C038	12	25171900	3446
N076	16	1E004	1	1C036	4	25171900	3446
N079	5	1E009	1	1E017	8	25171900	3446
N079	3	1E017	8	1E018	4	25171900	3446
N079	19	1E018	4	1J037	6	25171900	3446
N080	19	1J039	1	1J080	12	25171900	3446
N081	19	1J040	1	1E017	12	25171900	3446
N081	19	1J040	2	1E018	6	25171900	3446
N082	3	1E015	1	1E018	5	25171900	3446
N082	19	1E017	11	1J037	11	25171900	3446
N082	3	1E018	5	1E017	11	25171900	3446
N083	24	1J029	7	1C046	11	25171900	3446
N083	17	1J029	7	1J068	12	25171900	3446
N084	32	1J080	1	1E017	9	25171900	3446
N084	32	1J080	2	1E018	12	25171900	3446
N085	26	1J080	6	1J020	8	25171900	3446
N085	2	1J080	7	1J080	6	25171900	3446
N085	5	1J080	8	1GND		25171900	3446
N088	15	1B075	1	1F085	6	25171900	3446
N089	14	1B075	7	1F085	5	25171900	3446
N090	6	1B065	1	1B075	6	25171900	3446
N091	5	1B066	1	1B075	5	25171900	3446
N092	5	1B067	1	1B075	4	25171900	3446
N093	5	1B068	1	1B075	3	25171900	3446
N094	4	1B069	1	1B075	2	25171900	3446
N095	4	1B070	1	1B075	12	25171900	3446
N096	4	1B071	1	1B075	11	25171900	3446
N097	4	1B072	1	1B075	10	25171900	3446
N098	3	1B073	1	1B075	9	25171900	3446
N099	3	1B074	1	1B075	8	25171900	3446
P001	5	1H064	1	1G064	3	25171900	3446
P002	5	1H064	5	1G064	7	25171900	3446
P003	5	1H064	9	1G064	11	25171900	3446
P004	5	1H066	1	1G065	3	25171900	3446
P005	5	1H066	5	1G065	7	25171900	3446
P006	5	1H066	9	1G065	11	25171900	3446
P007	5	1H068	1	1G066	3	25171900	3446
P008	5	1H068	5	1G066	7	25171900	3446
P009	5	1H068	9	1G066	11	25171900	3446
P010	5	1H070	1	1G067	3	25171900	3446
P011	5	1H070	5	1G067	7	25171900	3446
P012	5	1H070	9	1G067	11	25171900	3446
P013	5	1H072	1	1G068	3	25171900	3446
P014	5	1H072	5	1G068	7	25171900	3446
P015	5	1H072	9	1G068	11	25171900	3446
P016	5	1H074	1	1G069	3	25171900	3446
P017	5	1H074	5	1G069	7	25171900	3446
P018	5	1H074	9	1G069	11	25171900	3446
P019	6	1H076	1	1G070	3	25171900	3446
P020	6	1H076	5	1G070	7	25171900	3446
P021	6	1H076	9	1G070	11	25171900	3446
P022	6	1H078	1	1G071	3	25171900	3446
P023	6	1H078	5	1G071	7	25171900	3446
P024	6	1H078	9	1G071	11	25171900	3446
P025	6	1H080	1	1G072	3	25171900	3446
P026	6	1H080	5	1G072	7	25171900	3446
P027	6	1H080	9	1G072	11	25171900	3446
P028	6	1H082	1	1G073	3	25171900	3446
P029	6	1H082	5	1G073	7	25171900	3446
P030	6	1H082	9	1G073	11	25171900	3446
P031	7	1H084	1	1G074	3	25171900	3446
P032	7	1H084	5	1G074	7	25171900	3446

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P033	7	1H084	9	1G074	11	25171900	3446
P034	7	1H086	1	1G075	3	25171900	3446
P035	7	1H086	5	1G075	7	25171900	3446
P036	7	1H086	9	1G075	11	25171900	3446
P037	7	1H088	1	1G076	3	25171900	3446
P038	7	1H088	5	1G076	7	25171900	3446
P039	7	1H088	9	1G076	11	25171900	3446
P040	8	1H090	1	1G077	3	25171900	3446
P041	8	1H090	5	1G077	7	25171900	3446
P042	8	1H090	9	1G077	11	25171900	3446
P043	10	1I066	1	1G078	3	25171900	3446
P044	10	1I066	5	1G078	7	25171900	3446
P045	10	1I066	9	1G078	11	25171900	3446
P046	9	1I068	1	1G079	3	25171900	3446
P047	9	1I068	5	1G079	7	25171900	3446
P048	9	1I068	9	1G079	11	25171900	3446
P049	9	1I070	1	1G080	3	25171900	3446
P050	9	1I070	5	1G080	7	25171900	3446
P051	9	1I070	9	1G080	11	25171900	3446
P052	9	1I072	1	1G081	3	25171900	3446
P053	9	1I072	5	1G081	7	25171900	3446
P054	9	1I072	9	1G081	11	25171900	3446
P055	8	1I074	1	1G082	3	25171900	3446
P056	8	1I074	5	1G082	7	25171900	3446
P057	8	1I074	9	1G082	11	25171900	3446
P058	8	1I076	1	1G083	3	25171900	3446
P059	8	1I076	5	1G083	7	25171900	3446
P060	8	1I076	9	1G083	11	25171900	3446
P061	8	1I078	1	1G084	3	25171900	3446
P062	8	1I078	5	1G084	7	25171900	3446
P063	8	1I078	9	1G084	11	25171900	3446
P064	8	1I080	1	1G085	3	25171900	3446
P065	8	1I080	5	1G085	7	25171900	3446
P066	8	1I080	9	1G085	11	25171900	3446
P067	8	1I082	1	1G086	3	25171900	3446
P068	8	1I082	5	1G086	7	25171900	3446
P069	8	1I082	9	1G086	11	25171900	3446
P070	8	1I084	1	1G087	3	25171900	3446
P071	8	1I084	5	1G087	7	25171900	3446
P072	8	1I084	9	1G087	11	25171900	3446
P073	8	1I086	1	1G088	3	25171900	3446
P074	8	1I086	5	1G088	7	25171900	3446
P075	8	1I086	9	1G088	11	25171900	3446
P076	8	1I088	1	1G089	3	25171900	3446
P077	8	1I088	5	1G089	7	25171900	3446
P078	8	1I088	9	1G089	11	25171900	3446
P079	8	1I090	1	1G090	3	25171900	3446
P080	8	1I090	5	1G090	7	25171900	3446
P500	14	1I090	9	1F071	4	25171900	3446
S500	4	1F085	1	1F081	6	25171900	3446
S500	3	1F085	1	1F088	4	25171900	3446
S500	5	1F085	2	1GND		25171900	3446
S501	3	1F084	11	1F081	12	25171900	3446
S501	3	1F085	7	1F084	11	25171900	3446
S501	17	1F085	8	1E048	7	25171900	3446
S502	4	1F084	1	1F080	6	25171900	3446
S502	17	1F084	2	1E048	6	25171900	3446
S503	2	1F084	7	1F083	6	25171900	3446
S503	3	1F084	7	1F085	12	25171900	3446
S503	5	1F084	8	1GND		25171900	3446
S504	4	1F075	1	1F073	11	25171900	3446
S504	7	1F075	1	1F086	6	25171900	3446

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S514	13	1F075	2	1E048	5	25171900	3446
S515	3	1F075	7	1F073	10	25171900	3446
S515	5	1F075	8	1GND		25171900	3446
S515	7	1F075	7	1F088	8	25171900	3446
S516	4	1F073	1	1F074	11	25171900	3446
S516	5	1F073	2	1GND		25171900	3446
S516	7	1F074	11	1F086	5	25171900	3446
S517	3	1F073	7	1F075	12	25171900	3446
S517	13	1F073	8	1E048	9	25171900	3446
S517	26	1F073	7	1J021	12	25171900	3446
S518	4	1F083	1	1F085	11	25171900	3446
S518	16	1F083	1	1D050	8	25171900	3446
S519	3	1F083	7	1F085	4	25171900	3446
S511	4	1F082	1	1F085	10	25171900	3446
S512	2	1F082	7	1F082	6	25171900	3446
S512	30	1F082	7	1J019	10	25171900	3446
S512	2	1J019	10	1J018	10	25171900	3446
S513	4	1F081	1	1F082	12	25171900	3446
S513	15	1F081	1	1E050	10	25171900	3446
S514	3	1F080	2	1F081	5	25171900	3446
S514	5	1F080	1	1F088	3	25171900	3446
S515	3	1F081	7	1F084	12	25171900	3446
S515	15	1F081	7	1D050	9	25171900	3446
S516	14	1F075	11	1D050	10	25171900	3446
S516	4	1F079	1	1F075	11	25171900	3446
S517	3	1F079	7	1F075	6	25171900	3446
S518	4	1C038	11	1C034	9	25171900	3446
S518	15	1F074	1	1E048	12	25171900	3446
S518	19	1F074	2	1C038	11	25171900	3446
S519	3	1F074	7	1F075	10	25171900	3446
S519	16	1F074	8	1J088	9	25171900	3446
S519	4	1F075	10	1F079	4	25171900	3446
S520	3	1F087	1	1F088	10	25171900	3446
S520	17	1F087	1	1D050	12	25171900	3446
S521	3	1F077	1	1F078	8	25171900	3446
S522	28	1E017	1	1F083	4	25171900	3446
S522	3	1F083	4	1F083	12	25171900	3446
S523	3	1E017	7	1E018	11	25171900	3446
S523	15	1E018	11	1E050	9	25171900	3446
S524	16	1E017	10	1J020	4	25171900	3446
S524	3	1E018	1	1E017	10	25171900	3446
S524	15	1E018	1	1E050	4	25171900	3446
S524	2	1J020	4	1J020	6	25171900	3446
S525	2	1E018	7	1E017	5	25171900	3446
S525	17	1E018	7	1J020	7	25171900	3446
S526	3	1F076	1	1F078	4	25171900	3446
S526	3	1F078	4	1F078	7	25171900	3446
S526	6	1F078	7	1F088	12	25171900	3446
S527	6	1F076	7	1F086	12	25171900	3446
S527	3	1F086	12	1F088	11	25171900	3446
S528	3	1F072	7	1F076	9	25171900	3446
S528	26	1F072	8	1G013	10	25171900	3446
S529	2	1F087	7	1F087	6	25171900	3446
S530	4	1F072	1	1F074	9	25171900	3446
S530	5	1F072	2	1GND		25171900	3446
S530	12	1F072	1	1D050	7	25171900	3446
S531	15	1F075	9	1J079	12	25171900	3446
S531	17	1G015	1	1J042	6	25171900	3446
S531	20	1J042	6	1J087	8	25171900	3446
S531	16	1J087	8	1F075	9	25171900	3446
S532	17	1G015	7	1J042	12	25171900	3446
S532	29	1J021	11	1F079	10	25171900	3446
S532	10	1J042	12	1J021	11	25171900	3446

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S533	3	1F080	7	1F082	5	25171900	3446
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S534	2	1F077	7	1F076	6	25171900	3446
S535	12	1F050	1	1H033	6	25171900	3446
S535	5	1F050	2	1GND		25171900	3446
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S535	17	1F050	3	1G013	11	25171900	3446
S535	3	1H033	6	1H032	12	25171900	3446
S535	3	1I033	6	1I032	12	25171900	3446
S536	8	1H048	7	1F050	6	25171900	3446
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S539	26	1J021	1	1F074	3	25171900	3446
S540	26	1J021	7	1F074	10	25171900	3446
S541	11	1J014	1	1G015	5	25171900	3446
S542	10	1J015	1	1G015	11	25171900	3446
S543	11	1C076	9	1F079	6	25171900	3446
S543	3	1F079	6	1F079	11	25171900	3446
S544	9	1E064	1	1C076	12	25171900	3446
S545	4	1J068	1	1J067	12	25171900	3446
S545	6	1J068	1	1J079	1	25171900	3446
S545	2	1J079	1	1J079	2	25171900	3446
S546	16	1J067	1	1F087	12	25171900	3446
S547	17	1J067	7	1F088	7	25171900	3446
S548	3	1J068	6	1J067	11	25171900	3446
S548	2	1J068	7	1J068	6	25171900	3446
S549	14	1J081	1	1F090	4	25171900	3446
S550	14	1J082	1	1F090	3	25171900	3446
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S552	2	1J079	3	1J079	4	25171900	3446
S552	3	1J081	5	1J079	3	25171900	3446
S552	2	1J081	5	1J082	6	25171900	3446
S553	28	1J087	5	1J021	4	25171900	3446
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T014	22	1J006	7	1H054	12	25171900	3446
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T018	21	1J008	1	1H055	5	25171900	3446
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T020	21	1J009	1	1H055	3	25171900	3446
T021	9	1J009	7	1J028	4	25171900	3446
T021	15	1J028	4	1J060	12	25171900	3446
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T023	3	1J024	7	1J028	5	25171900	3446
T023	15	1J028	5	1J062	12	25171900	3446
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T113	19	1J010	1	1I053	12	25171900	3446
T114	20	1J010	7	1I054	12	25171900	3446
T115	7	1I050	3	1J059	5	25171900	3446

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T124	13	1J027	1	1I055	2	25171900	3446
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Y103	4	1I042	7	1I037	5	25171900	3446
Y103	13	1I042	8	1J017	9	25171900	3446
Y105	14	1I063	7	1I032	10	25171900	3446
Y105	20	1I063	8	1J017	10	25171900	3446
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Y213	2	1J022	7	1J022	5	25171900	3446
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	2	1C024	12	1C023	12	25171900	3446
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	2	1D013	12	1D012	12	25171900	3446
	5	1D014	12	1E014	12	25171900	3446
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	2	1E012	12	1E011	12	25171900	3446

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