

DIMENSION[®] 2000 AND CUSTOM PBX
(CSS 201L)
X-RAY, MAAP FLIP CHART

1. GENERAL INFORMATION
2. RECORDS
3. TEST EQUIPMENT
4. TEST PROCEDURES

1. GENERAL INFORMATION

1.1 Description

- 1.11 This section contains the display formats for the MAAP panel associated with the various fault codes contained in section 400.80T.

2. RECORDS

- 2.1 The results of the test being administered in connection with the use of the display formats and use of the fault code tables should be recorded on form SD-97-1313.

3. TEST EQUIPMENT

- 3.1 Test Sets - See Section 400 of HB 281.

4. TEST PROCEDURES

- 4.1 Test procedures are contained in the fault code description in section 400.80T.

PRIVATE

THE INFORMATION CONTAINED HEREIN SHOULD NOT BE DISCLOSED TO UNAUTHORIZED PERSONS. IT IS MEANT SOLELY FOR USE BY AUTHORIZED BELL SYSTEM EMPLOYEES.

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○ ○ FORMAT F1 ○ ○			X-RAY TEST NO.
CURRENT X-RAY TIME			
HOURS	MIN	SEC	

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FORMAT F2										X-RAY TEST NO.
TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE C)	CARRIER (TABLE D)	BOARD (DECIMAL) (TABLE E)	PORT	HI/LO ADDRESS (NOTE)	FAULT CODE		
HOURS	MIN	SEC								

NOTE:

Hi/Low Address = 1, Defective board is LC05 in slot 06.
 Hi/Low Address = 0, Defective board is LC04 in slot 05.

FORMAT F3

TIME OF FAULT

HOURS

MIN

SEC.

FAULT CODE

X-RAY
TEST
NO.

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FORMAT F4							X-RAY TEST NO.
TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE F)	DATA TRANSMITTED (OCTAL)	DATA RECEIVED (OCTAL)	FAULT CODE	
HOURS	MIN	SEC					

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FORMAT F5						X-RAY TEST NO.
TIME OF FAULT			MAIN STORE ADDRESS WHERE FAULT OCCURRED (OCTAL)	CONTENTS OF MAIN STORE ADDRESS (OCTAL) (SEE NOTE)	FAULT CODE	
HOURS	MIN	SEC				

NOTE:

At present, these fields are pertinent only to the software designers.

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FORMAT F6										X-RAY TEST NO.			
TIME OF FAULT			TAPE STATUS AT TIME OF FAULT. DESCR. APPLIES TO VALUE OF 1.	TAPE DN REEL	CARTRIDGE REMOVED	NOT EOT	NOT BOT	TAPE IDLE	BUFFER OVERFLOW		NO DATA LOST	LOAD POINT OR EARLY WARNING	FAULT CODE
HOURS	MIN	SEC											

FORMAT F7

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CURRENT X-RAY TIME

HOURS

MIN

SEC

**NO. OF FAULTS
SINCE TEST
STARTUP
BLANK=NONE**

**LATEST
FAULT CODE
SINCE TEST
STARTUP
BLANK=NONE**

**X-RAY
TEST
NO.**

FORMAT F8

TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE C)	TONE FAIL FLAGS 1 = TONE FAILED	SPECIAL AUDIBLE RING	AUDIBLE RING	REORDER	BUSY	INTERCEPT	MISC	RECALL DIAL	DIAL	FAULT CODE	X-RAY TEST NO.
HOURS	MIN	SEC												

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FORMAT F9										109
NO. OF LC105 BDS	NO. OF LC02 BOARDS (NOTE 1)	NO. OF LC04, LC05, BDS	NO. OF LC45 BDS	NO. OF LC100 BOARDS (NOTE 2)	NO. OF LINE CARRIER LOOP-BACK FIXTURES	NO. OF LINK CARRIER LOOP-BACK FIXTURES	NO. OF LINK CARRIERS	NO. OF LINK CARRIERS WITH INTERMODULE CONNECTION	NO. OF INTERCONNECTED LINK PORTS (NOTE 3)	

NOTES:

Line/Link status (accessed by depressing DISPLAY, 0, NEXT DATA).

1. LC02 count includes LC100 count if LC105 count is zero.
2. Link circuit (LC100) looks like a line circuit until properly identified by the common amplifier test (which occurs on tests 02, 17, 21 & 45).
3. The count of interconnected link ports is valid after the first pass of tests 02, 47 & 50.

FORMAT F10											
NO. OF LC06 BOARDS	NO. OF LC08 BOARDS	NO. OF LC09 BOARDS	NO. OF LC11 BOARDS	NO. OF LC13s	NO. OF LC16 BOARDS	NO. OF LC10 BOARDS	UNIDENTIFIED BOARD COUNT (NOTES 2, 3)	NO. OF TRUNK CARRIER LOOPBACK FIXTURES (NOTE 1)	PIC COUNT	LC144 FLAGS (NOTE 4)	110

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NOTES:

Trunk Status (accessed by depressing DISPLAY, 0, NEXT DATA (2 times)).

1. The trunk carrier loopback fixture count should be equal the number of special loopback fixtures attached to the trunk carrier.
2. Trunk boards are not identified unless carriers are equipped with loopback fixtures.
3. This count includes LC278 with or without loopback fixtures.
4. A 1 Indicates an LC144 is in the system.

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FORMAT F11												
CABINET NUMBER (OCTAL) (TABLE C)	NO. OF CARRIERS (DECIMAL) (NOTES 1, 2)	NO. OF BOARDS (DEC) (NOTE 3)	CABINET NUMBER (OCTAL)	NO. OF CARRIERS (DECIMAL) (NOTES 1, 2)	NO. OF BOARDS (DEC) (NOTE 3)	CABINET NUMBER (OCTAL)	NO. OF CARRIERS (DECIMAL) (NOTES 1, 2)	NO. OF BOARDS (DEC) (NOTE 3)	CABINET NUMBER (OCTAL)	NO. OF CARRIERS (DECIMAL) (NOTES 1, 2)	NO. OF BOARDS (DEC) (NOTE 3)	111

NOTES:

Cabinet Summary (accessed by depressing DISPLAY, 1).

- Carrier count includes line, line group control, trunk, module control and link carriers.
- If both halves of a link carrier are equipped, it counts as two network carriers.
- The board count includes LC02, LC04, LC05, LC06, LC08, LC09, LC10, LC11, LC13, LC16, LC45, LC100, LC278, LC279 and LC285.

FORMAT F12																		
CABINET NUMBER (OCTAL) (TABLE C)	CARRIER NUMBER (TABLE D) (NOTE 2)	CARRIER TYPE (NOTE 3)	NO. OF BOARDS (NOTE 1)	BOARD NO. →	BOARD TYPE VERSUS ELECTRICAL BOARD NUMBER													112
					0	1	2	3	4	5	6	7	8	9	10	11	12	
				BOARD TYPE →														

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NOTES:

1. The board count includes LC02, LC04, LC05, LC06, LC08, LC09, LC10, LC11, LC13, LC16, LC45 and LC100.
2. The carrier number is the electrical carrier number in the Port Equipment Numbers (PEN).

3. <u>Carrier Type</u>	<u>Board Type</u>
1 - Line	2 - LC02
4 - Link	3 - LC100
5 - Line Group	4 - LC04
	5 - LC105
	7 - LC45
2 Trunks	1 - LC11
	7 - LC10
6 Module	0 - Unknown
	3 - LC13
	4 - LC16
	5 - LC105
	6 - LC06
	8 - LC08
	9 - LC09

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FORMAT F13						X-RAY TEST NO.
TIME OF FAULT			MAIN STORE ADDRESS WHERE FAULT OCCURRED (OCTAL) (SEE NOTE)	CONTENTS OF ERROR FLAG REGISTER (RO) (OCTAL) (SEE NOTE)	FAULT CODE	
HOURS	MIN	SEC				

NOTE:

At present, these fields are pertinent only to the software designers.

		FORMAT F14		
			MAAP BUTTON CODE	

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FORMAT F15							X-RAY TEST NO.
TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE C)	FAULTY DATA BLANK-NONE	FAULT CODE		
HOURS	MIN	SEC					

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FORMAT F16

TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE C)	NUMBER OF SCAN TESTS FAILED (OCTAL)	FAULTY SCAN DATA (OCTAL)	FAULT CODE	X-RAY TEST NO.
HOURS	MIN	SEC					

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FORMAT F17							X-RAY TEST NO.
TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE C)	CARRIER (TABLE D)	FAULTY REPLY (OCTAL) (SEE NOTE)	FAULT CODE	
HOURS	MIN	SEC					

NOTE:

At present, these fields are pertinent only to the software designers.

FORMAT F18											118	
NO. OF MEMORY BOARDS	NO. OF LC 130 s	NO. OF NETWORK CABINETS	NO. OF NETWORK CARRIERS (LINE, TRUNK, LINK) (NOTES 1,2)	NO. OF NETWORK BOARDS (LC 2, 4, 5, 6, 8, 9, 11, 13, 16, 10, 45, 100) (NOTE 2)	NO. OF LC348/LC366 BOARDS	NO. OF ATTENDANT CONSOLES	ETC COUNT	NO. OF LC171, LC 172 BDS	NO. OF LC32' S 1 = SMDR EQUIPPED	NO. OF 800KHZ CHANNELS		NO. OF 0.2, 0.8, 4.0 MHZ CHANNELS WITH LOOPBACK FIXTURES

NOTES:

System Parameters (Accessed by depressing DISPLAY and 0).

1. If both halves of a link carrier are equipped, it counts as two network carriers.
2. At the start up of test 02, the network carrier and board counts will not be displayed for approximately two minutes.
3. Cabinet, carrier and board counts may be checked in more detail by using formats F9, F11 & F12.
4. Refer to format F10 to check the trunk fixture count.
5. Refer to format F20 to check ETC status.

FORMAT F19										X-RAY TEST NO.
TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE C)	CARRIER (TABLE D)	BOARD (DEC. TABLE E)	P O R T	HI/LOW ADDRESS	FAULTY DATA (SEE NOTE 2)	FAULT CODE	
HOURS	MIN	SEC								

NOTES:

1. Hi/Low Address = 1, defective board is LC05 in Slot 06.
Hi/Low address = 0, defective board is LC04 in Slot 05.
2. At present, these fields are pertinent only to the software designers.

FORMAT F20								120
DATA CHANNEL ADDRESS OF THIS ETC (TABLE F)	NO. OF 5-BUTTON ECT SETS	NO. OF 10-BUTTON ECT SETS	NO. OF 20 AND 30 BUTTON ECT SETS	NO. OF 5-BUTTON ECT SETS	NO. OF 10-BUTTON ECT SETS	NO. OF 20 AND 30 BUTTON ECT SETS	NO. OF STEERING CIRCUITS USING EXTERNAL LOOPBACK FIXTURES	

NOTES:

ETC parameters (Accessed by depressing DISPLAY, 0, NEXT DATA (3 times)).

1. This format information is not available until the ETC test has been run (Test 07).
2. If no ETC, the display clears and resets.
3. All counts are decimal numbers.
4. All sets are initially identified as 10-button sets. The count for 5, 20 and 30-button sets will remain zero until size is changed.
5. After accessing format F20, depressing NEXT DATA repeatedly will display additional ETC's are displayed. After the last ETC is displayed, depressing NEXT DATA will clear and reset the display.

FORMAT F21																
CABINET NUMBER (OCTAL) (TABLE C)	CARRIER NUMBER (TABLE D)	NO. OF TERMINATED PORTS ON THIS LINK CARRIER	BOARD NO. →	TERMINATED PORTS VS ELECTRICAL BOARD NO.											121	
				0	1	2	3	4		5	6	7	8	9		10
			PORT COUNT →													

NOTES:

Intermodule Link Circuit Connections - A.
(Accessed by depressing DISPLAY and 6)

1. Network configuration changes are updated by running test 02, 47 or 50.

<u>Port Count</u>	<u>Definition</u>
Blank	Board number unequipped
0-4	Number of intermodule ports
5	Link carrier loopback fixture

FORMAT F22										
CABINET NUMBER (OCTAL) (TABLE C)	CARRIER NUMBER (TABLE D)	BOARD NO. (TABLE E)	PORT NO.		CABINET NUMBER (OCTAL) (TABLE C)	CARRIER NUMBER (TABLE D)	BOARD NO. (TABLE E)	PORT NO.		122

NOTES:

Intermodule Link Circuit Connections - B
 (Accessed by depressing DISPLAY and 7)

1. Cabinet number 777 indicates a port is not connected.
2. Network configuration changes are updated by running test 02, 47 or 50.

FORMAT F23							X-RAY TEST NO.
TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE F)	ETC FAULT REGISTER 0 (SEE NOTE)	ETC FAULT REGISTER 1 (SEE NOTE)	FAULT CODE	
HOURS	MIN	SEC					

NOTE:

At present, these fields are pertinent only to the software designers.

FORMAT F24					X-RAY TEST NO.
	DATA CHANNEL ADDRESS (TABLE F)	FAULTY STEERING CIRCUIT ADDRESS (TABLE G)	PORT TYPE (SEE NOTE)	FAULT CODE	

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NOTE:

Port Type

Termination

- | | |
|---|----------------------|
| 0 | No Station |
| 1 | Key telephone set |
| 2 | Custom telephone set |
| 4 | Loop-back fixture |

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FORMAT F25					X-RAY TEST NO.
	DATA CHANNEL ADDRESS (TABLE F)	FAULTY STEERING CIRCUIT ADDRESS (TABLE G)	FAULT TYPE (SEE NOTE)	FAULT CODE	

NOTE:

At present, this field is pertinent only to the software designers.

FORMAT F26					X-RAY TEST NO.
	DATA CHANNEL ADDRESS (TABLE F)	FAULTY ETC MEMORY ADDRESS (SEE NOTE)	FAULTY BIT POSITION (SEE NOTE)	FAULT CODE	

NOTE:

At present, this field is pertinent only to the software designers.

FORMAT F27					X-RAY TEST NO.
	DATA CHANNEL ADDRESS (TABLE F)	DATA TRANSMITTED (OCTAL) (SEE NOTE)	DATA RECEIVED (OCTAL) (SEE NOTE)	FAULT CODE	

NOTE:

At present, these fields are pertinent only to the software designers.

FORMAT F28							X-RAY TEST NO.	
CURRENT X-RAY TIME			BURN IN INDICATOR. BLANK = NOT BURN IN DASHES = BURN IN	S P E E D (NOTE 1)	D U P L I C A T E (NOTE 2)	NUMBER OF FAULTS SINCE MANUAL START-UP BLANK=NONE		LATEST FAULT CODE SINCE MANUAL START-UP. BLANK=NONE
HOURS	MIN	SEC						

NOTES:

- Speed: 0 for low speed data channel.
1 for high speed data channel.
- Duplicated/Unduplicated Processor:
1 for duplicated processor
0 for unduplicated processor

FORMAT F29		129
CABINET NUMBER (OCTAL) (TABLE C)	0	

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NOTES:

LINK CONNECTIONS

If no link connections exist on this cabinet when formats F21 or F22 are entered, this format appears on the MAAP, continue to input the desired cabinet number or operate NEXT DATA button to continue the search for the next link circuit.

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FORMAT F30				130
SYSTEM SERIAL NO. (DECIMAL)		TAPE DRIVE SERIAL NO. (DECIMAL)		

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FORMAT F31							X-RAY TEST NO.
TIME OF FAULT				MEMORY (TH'S) (NOTE)		COMPLETION CODE	
HOURS	MIN	SEC					

NOTE:

Indicates the number of 1K memory blocks tested.

FORMAT F32

TIME OF FAULT				NUMBER OF LC03s		X-RAY TEST NO.
HOURS	MIN	SEC				

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FORMAT F33							X-RAY TEST NO.
TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE C)	TEST STATE NO. IN OCTAL	0	FAULT CODE	
HOURS	MIN	SEC					

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NOTE:

1. a. Port A (ie.,0) is involved with states
0-12, 17, 20, 21 & 27.
- b. Port B (ie.,1) is involved with states
13-16, 22 & 26.
- c. Ports A & B are involved with states 23-25.

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TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE C)	LC17 TONE FAIL FLAGS 1 = TONE FAILED → ○ ○ ○ ○	CHINE	480 HZ	ZIP	IMMEDIATE RINGBACK	FAULT CODE	X-RAY TEST NO.
HOURS	MIN	SEC								

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FORMAT F35							X-RAY TEST NO.
TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE F)	(OCTAL) OVERFLOW COUNT		FAULT CODE	
HOUR	MIN	SEC					

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TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE F)	PIC MATE ADDRESS (OCTAL)		FAULT CODE	X-RAY TEST NO.
HOUR	MIN	SEC					

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FORMAT F37

TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE F)	DATA EXPECTED	DATA RECEIVED	FAULT CODE	X-RAY TEST NO.
HR	MIN	SEC					

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FORMAT F38

TIME OF FAULT			DATA CHANNEL ADDRESS (TABLE F)	TEST NUMBER	0	FAULT CODE	X-RAY TEST NO.
HOUR	MIN	SEC					

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TABLE B

NETWORK CABINET LOCATOR

DATA CHANNEL ADDRESS	CABINET NUMBER*	DATA CHANNEL ADDRESS	CABINET NUMBER*	DATA CHANNEL ADDRESS	CABINET NUMBER*
000	MODCC 000	110	LNC 044	140	LNC 093
001	MODCC 001	111	MODCC 050	141	LNC 094
002	LNC 002	112	MODCC 051	142	MODCC 100
003	LNC 003	113	LNC 052	143	MODCC 101
004	LNC 004	114	LNC 053	144	LNC 102
005	MODCC 010	115	LNC 054	145	LNC 103
006	MODCC 011	116	MODCC 060	146	LNC 104
007	LNC 012	117	MODCC 061	147	MODCC 110
010	LNC 013	120	LNC 062	150	MODCC 111
011	LNC 014	121	LNC 063	151	LNC 112
012	MODCC 020	122	LNC 064	152	LNC 113
013	MODCC 021	123	MOCDD 070	153	LNC 114
014	LNC 022	124	MODCC 071	154	MODCC 120
015	LNC 023	125	LNC 072	155	MODCC 121
016	LNC 024	126	LNC 073	156	LNC 122
017	MODCC 030	127	LNC 074	157	LNC 123
100	MODCC 031	130	MODCC 080	160	LNC 124
101	LNC 032	131	MODCC 081	161	MODCC 130
102	LNC 033	132	LNC 082	162	MODCC 131
103	LNC 034	133	LNC 083	163	LNC 132
104	MODCC 040	134	LNC 084	164	LNC 133
105	MODCC 041	135	MODCC 090	165	LNC 134
106	LNC 042	136	MODCC 091	166	MODCC 140
107	LNC 043	137	LNC 092	167	MODCC 141

* The cabinet number is the white lettering inside the cabinet on the floor.

TABLE C
NETWORK CARRIER LOCATOR

CARRIER IDENT	CARRIER TYPE
6	E High (Physical Carrier 2)
5	E High (Physical Carrier 3 or 4)
4	A, B, D or E (Low)
3	A, B, D or E (Low)
2	A, B, D or E (Low)
1	A, B or D
0*	C or D
A = J58879AC Line Port Carrier B = J58879BA Trunk Port Carrier C = J58882BA Module Control and Trunk Port Carrier D = J58882BB Line Group Control Carrier E = J58882BC Link Carrier	

* Carrier zero is the bottom carrier position in the cabinet just above the power supply. There are five carrier positions, numbered zero through four from bottom to top, in a network cabinet.

TABLE D
NETWORK BOARD LOCATOR

BOARD NUMBER	SLOT NUMBER IN CARRIER					
	A	B	C	D	E(low)*	E(hi)*
0	02	02	06	05	04	17
1	03	03	07	07	05	18
2	04	04	08	08	06	19
3	05	05	10	09	07	20
4	06	06	12	10	08	21
5	07	07	15	12	10	23
6	08	08	17	13	11	24
7	09	09	19	14	12	25
8	11	11	21	15	13	26
9	12	12	23	16	14	27
10	13	13	25	17	15	28
11	14	14	—	18	—	—
12	15	15	—	—	—	—
13	16	16	—	—	—	—
14	17	17	—	—	—	—
15	18	18	00	01	—	—

Carrier Types

A = J58879AC Line Port Carrier
 B = J58879BA Trunk Port Carrier
 C = J58882BA Module Control and Trunk Port Carrier
 D = J58882BB Line Group Control Carrier
 E = J58882BC Link Carrier

* One physical link carrier is made up of two electrical carriers. The first or lower link carrier contains carrier numbers 2 and 6. The next link carrier contains addresses 3 or 4, and 5.

TABLE E

COMMON CONTROL BOARD LOCATOR

DATA CHANNEL ADDRESS (SEE NOTE)	BASIC CONTROL CARRIER SLOT	CIRCUIT PACK	DATA CHANNEL ADDRESS	FIRST GROWTH CONTROL CARRIER SLOT	CIRCUIT PACK		
000 - 017	39, 40	LC130, LC131	100 - 117	34, 35	LC130, LC131		
414, 415	30*	LC172, LC34B	120 - 137	34, 36	LC130, LC131		
416, 417	31*	LC171, LC34B	140 - 157	37, 38	LC130, LC131		
420, 421	32	LC34B	160 - 177	37, 39	LC130, LC131		
422, 423	33	↑	500, 501	20	LC34B		
424, 425	34	↑	502, 503	21	↑		
426, 427	35	↑	504, 505	22	↑		
430, 431	36	↑	506, 507	23	↑		
432, 433	37	↓	510, 571	24	↑		
434, 435	38	LC34B	512, 513	25	↑		
* Slot 30 could be equipped with LC34B or LC172. Slot 31 could be equipped with LC34B or LC171.			514, 515	26	↑		
			516, 517	27	↑		
			520, 521	28	↑		
			522, 523	29	↑		
			524, 525	30	↑		
			526, 527	31	↑		
			530, 531	32	↑		
			532, 533	33	↓		
					LC34B		

Note: To locate the network cabinet corresponding to the data channel address, refer to Table C.

TABLE F

STEERING CIRCUIT BOARD LOCATOR
(FORMATS F24 AND F25)

STEERING CIRCUIT ADDRESS	BASIC CARRIER SLOT	STEERING CIRCUIT ADDRESS	SUPL CARRIER SLOT
0 - 7	00	100 - 107	13
10 - 17	01	110 - 117	14
20 - 27	02	120 - 127	15
30 - 37	03	130 - 137	16
40 - 47	04	140 - 147	17
50 - 57	05	150 - 157	18
60 - 67	06	160 - 167	19
70 - 77	07	170 - 177	20

TABLE G

RELATIONSHIP OF TONE/TIME SLOT/TIME
RELATIVE TO TONE TEST START

STONE	TIME SLOT	TIME (SECONDS)
Dial	0	0.00 - 66.00
Dial	8 - 63	0.05 - 66.00
Recall Dial	1	0.05 - 66.00
Miscellaneous	2	11.00 - 66.00
Intercept	3	11.05 - 66.00
Busy	4	22.00 - 66.00
Reorder	5	33.00 - 66.00
Audible Ring	6	44.00 - 66.00
Special Audible Ring	7	55.00 - 66.00

Reason for Issue:
New Section

Manager, Denver PBX PECC