

## CONCENTRATING FRAME FOR COIN ZONE TRUNK UNITS EQUIPMENT DESIGN REQUIREMENTS NO. 1 CROSSBAR, PANEL AND STEP-BY-STEP SYSTEMS

### 1. GENERAL

#### Scope

1.01 This specification, together with the supplementary information listed herein, provides the equipment design requirements for the framework, equipment, and circuits to be used in the engineering, manufacture, and installation of coin zone concentrating frames for No. 1 crossbar, panel, and step-by-step offices.

1.02 This specification is being reissued to add a new BSP division number 815-039-150, and to bring it into conformity with the general Plant Series plan.

#### Capacity

1.03 The capacities peculiar to the individual concentrating frames are as follows.

	CN ZN TRKS	OUTGOING TRKS
Basic CN ZN CONC FR	40	20
1st SUPL CN ZN CONC FR	40	-
2nd SUPL CN ZN CONC FR	-	10

#### Description

1.04 The basic and supplementary coin zone concentrating frames are used to establish a connection between coin zone trunks and outgoing trunks to operators in the same or a distant building and are provided where it is desired to use fewer channels between the coin zone trunks and the operators than would otherwise be required. The basic concentrating frame will accommodate a maximum of 40 coin zone trunks, any one of which may be connected to one of a maximum of 20 outgoing trunks. The first supplementary frame will accommodate an additional 40 coin zone trunks. The basic and first supplementary frames when used together permit the connection of any one of 80 coin zone trunks to any one of 20 outgoing trunks. The second supplementary frame accommodates an additional ten outgoing trunks. The three frames when used together permit the connection of any one of 80 coin zone trunks to any one of 30 outgoing trunks.

1.05 The basic and supplementary coin zone concentrating frames are bulb-angle single bay frameworks 11 feet, 6 inches high and 2 feet, 8-1/8 inches long.

The basic, first supplementary, and second supplementary frames are shown in Fig. 1, 2, and 3, respectively.

1.06 The basic coin zone concentrating frame mounts all of the common control equipment, eight 5-wire 200-point crossbar switches and the trouble indicating equipment which locates and records troubles in the common control feature when a connection is not established within a specified time. The supplementary frames mount only crossbar switches (maximum eight each) and miscellaneous equipment.

1.07 The coin zone trunks appear on the verticals (hold magnets) while the outgoing trunks to the coin zone operator appear on the horizontals (select magnets) of a 5-wire crossbar switch. All verticals and hold magnets associated with the same coin zone trunk are multipled together, while all horizontals and select magnets associated with the same outgoing trunk are multipled together. Nine leads and one spare are required to be extended from the coin zone trunk to the outgoing trunk to the coin zone operator. To do this requires two crossbar switches (A- and B-) per connection. The maximum size unit of 80 coin zone trunks and 30 outgoing trunks requires twenty-four 5-wire 200-point crossbar switches. The arrangement of the inter-connecting switch multiples is shown in Fig. 4.

1.08 A minimum of four crossbar switches is always provided on the basic frame for the first 40 or less coin zone trunks and first 10 or less outgoing trunks. The coin zone trunks may be split evenly over the verticals of (-00) and (-01) switches. Connection to a second group of ten outgoing trunks may be provided on the basic frame by the addition of the required outgoing trunk preference relay equipment and four A10, B10, A11, and B11 crossbar switches. The vertical and horizontal multiple between switches is provided in the frame local cable. If it is desired to connect to additional coin zone trunks, the first supplementary frame must be provided. This frame is arranged to serve 40 coin trunks with access to the 20 outgoing trunks appearing on the basic frame. If the first supplementary frame is equipped

J99256, ISSUE 4  
SECTION 814-510-151, 815-039-150, 816-720-150

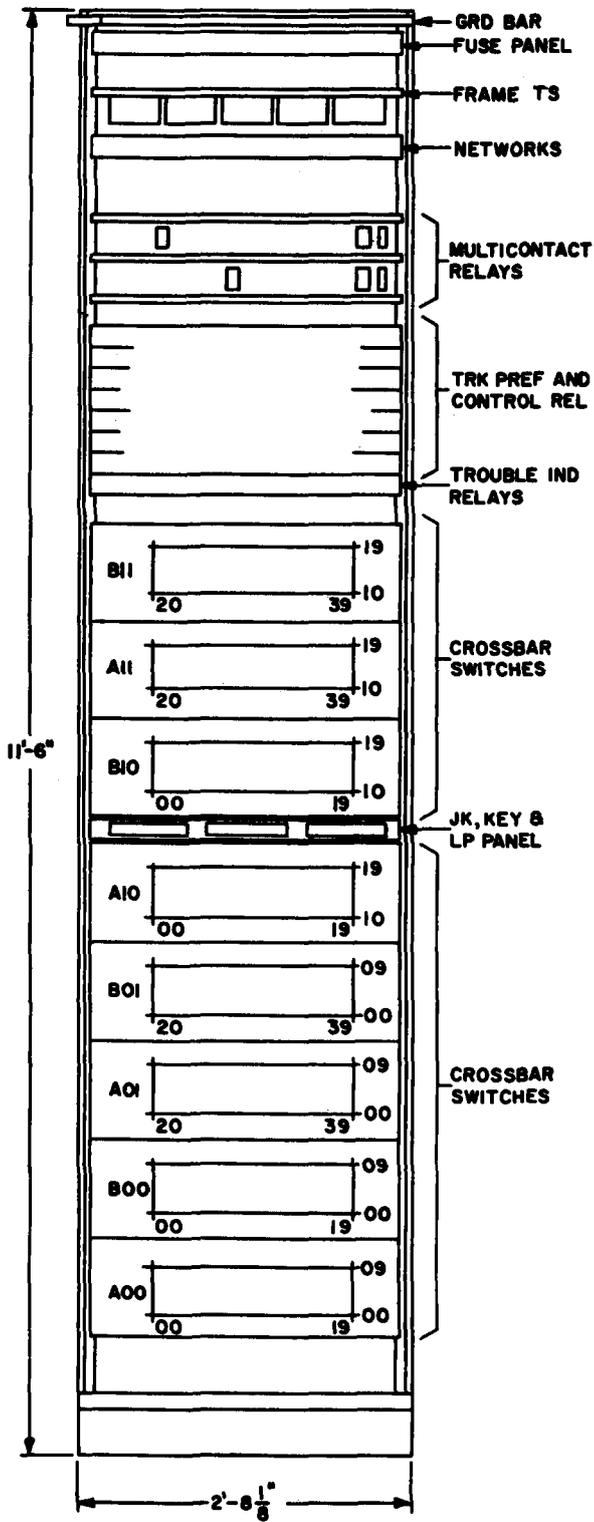


Fig. 1 - Concentrating Frame (Basic)

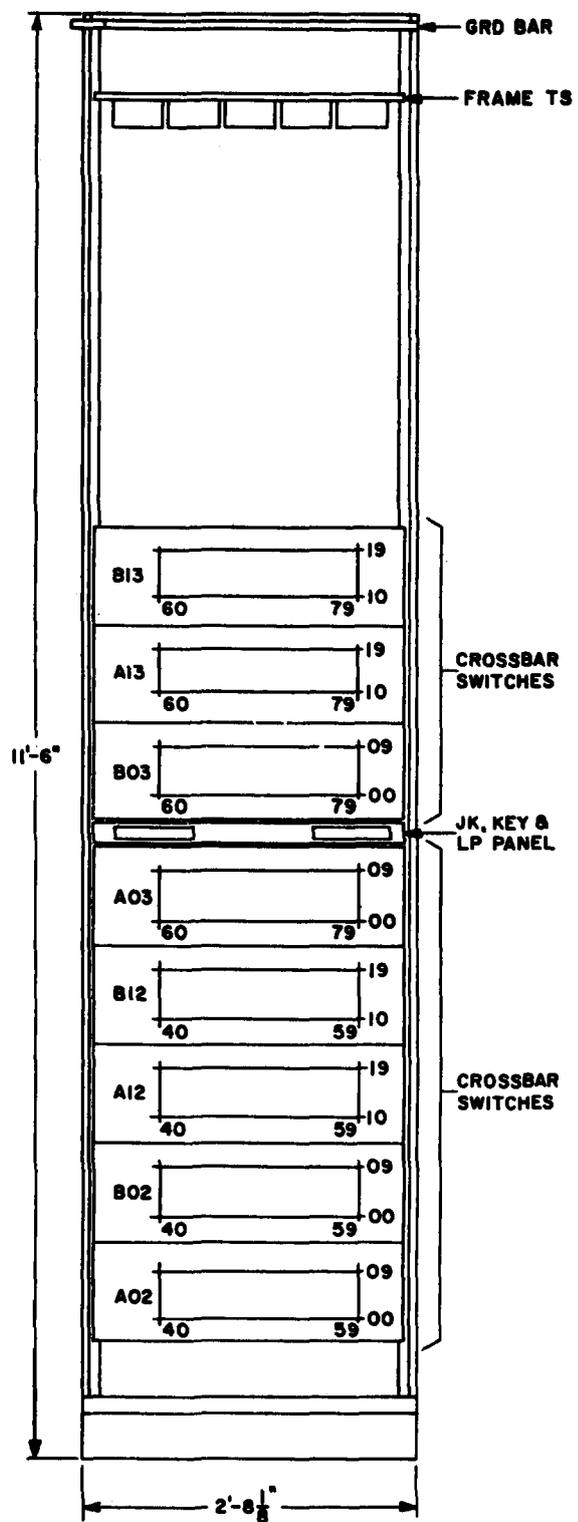


Fig. 2 - First Supplementary Concentrating Frame

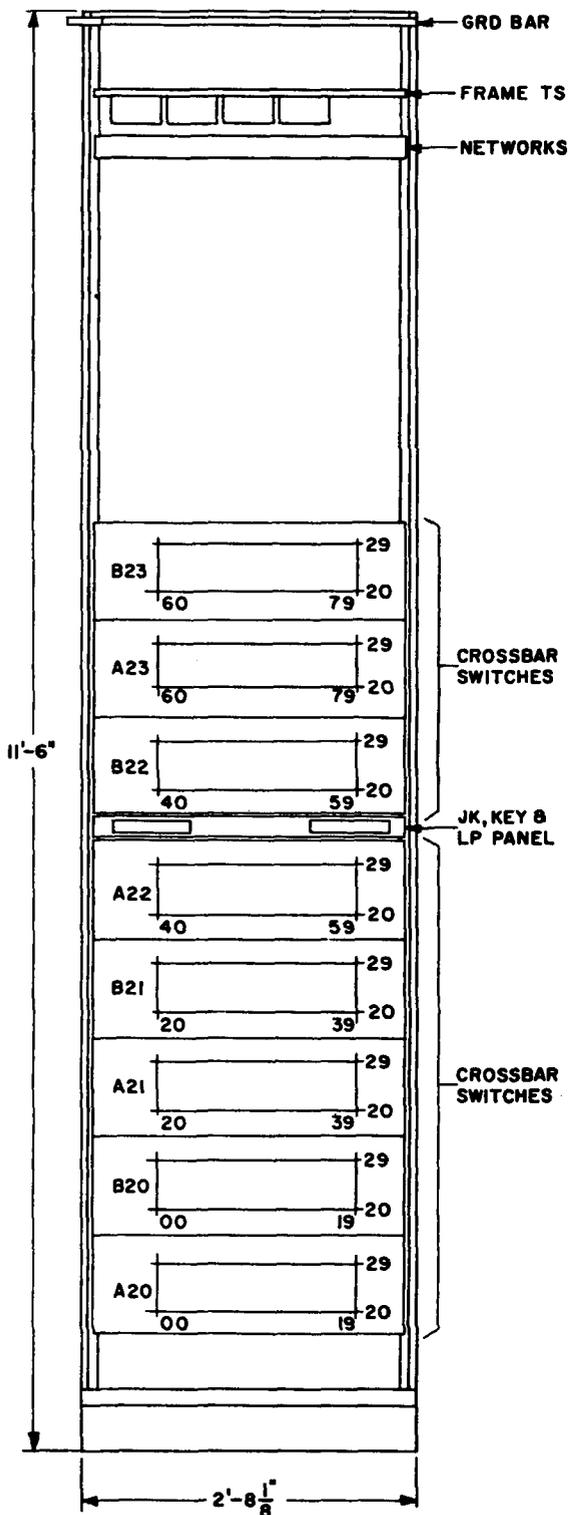


Fig. 3 - Second Supplementary Concentrating Frame

to serve only one additional group of 20 coin zone trunks, it will be necessary to add the A02, B02, A03, and B03 crossbar switches. The A12, B12, A13, and B13 crossbar switches must be added when it is desired to equip for a second additional group of 20 coin zone trunks. The vertical and horizontal multiple is provided in the frame local cable. The necessary associated relay equipment for each 20 coin zone trunks is located on the basic frame. If it is desired to connect to a third group of ten outgoing trunks with access to the 80 coin zone trunks appearing on the basic and first supplementary frames, it will be necessary to add a second supplementary frame consisting of eight A20, B20, A21, B21, A22, B22, A23, and B23 crossbar switches. Switchboard cable must be provided to extend the vertical and horizontal multiple between the three frames.

1.09 In order to reduce switchboard cable length, it is recommended that the concentrating frames be located as near the coin zone trunk and outgoing trunk frames as possible. The supplementary frames are most conveniently and economically located adjacent and to the right of the basic frame. Where floor plan arrangements do not permit, the supplementary frames may be positioned in a remote location except where a 10-ohm limit approximately 350 feet is imposed on the HM switchboard cable leads as measured from the basic coin zone concentrating frame to the first or second supplementary frame.

**2. SUPPLEMENTARY INFORMATION**

- 814-000-000 - Step-by-Step Systems Index
- 815-000-000 - Panel Systems Index
- 816-000-000 - No. 1 Crossbar System Index
- AAL28.006 - List of General Equipment Requirements Sections
- Floor Plan Data - Section 7.1, Sheet 64, Concentrating Frames

**3. DRAWINGS**

- WECO J drawings should be ordered by referring to the prefix and base number and requesting the current dash (-) number.
- ED-27114-( ) - Table of Wire Gauges and Type of Insulation for Crossbar No. 1
  - ED-32264-( ) - Table of Wire Gauges and Type of Insulation for Step-By-Step Frames
  - ED-95083-( ) - Concentrating Frames - Switchboard Cabling Details
  - ED-95084-( ) - Concentrating Frames - Local Cable
  - J99256A-( ) - Concentrating Frame
  - J99256B-( ) - First Supplementary Frame
  - J99256C-( ) - Second Supplementary Frame.
  - J99256AA-( ) - Fuse Panel Unit for Step-By-Step Offices
  - J99256AB-( ) - Fuse Panel Unit for Panel and No. 1 Crossbar Offices
  - SD-96524-01 - Concentrating Circuit
  - SD-96545-01 - Miscellaneous Circuit for Concentrating Frame

J99256, ISSUE 4  
SECTION 814-510-151, 815-039-150, 816-720-150

4. EQUIPMENT

J99256A (AT&TCo Std) - Coin Zone Concentrating Frame

Equipment - J99256A-( )

Local Cable - ED-95084-( )

List 1 - Framework, assembly, equipment, and wiring for one coin zone concentrating frame arranged to serve 40 coin zone trunks and 20 outgoing trunks equipped to serve 40 coin zone trunks (00 to 39) and 10 outgoing trunks (00 to 09).

	<u>Wire</u>	<u>Equip</u>	<u>Notes</u>	<u>See</u>
Concentrating Ckt, SD-96524-01:				
Concentrator, Fig. 1	1	1	A	
Trunk Switch, Fig. 2	8	4	B	
Outgoing Trunk Pref, Fig. 3	3	1		
Coin Zone Trunk Tens Pref, Fig. 4	8	4		
Test Relay Strap Wire Mult Per CAD 6	3	0	C	
Tens Relay Strap Wire Mult Per CAD 7	8	0	D	
99A Apparatus Blank	0	10	E	
Miscellaneous Ckt for Concentrating Frame, SD-96545-01:				
48V Frame Test Battery Ckt, Fig. 3	1	1		
Spare Jack Ckt, Fig. 4	1	1		
Remote Control Jack Ckt, Fig. 5	1	1		
Frame Talking Line Ckt, Fig. 6 (for panel & No. 1 crossbar office only) or	1	1		
Frame Talking Line Ckt, Fig. 7 (for step-by-step offices only)	1	1		
Alarm Release Key Ckt, Fig. 8	1	1	J	
Alarm Lamp Ckt, Fig. 9	1	1		
Transfer Key Ckt, Fig. 10	1	1		
+130V Frame Test Battery Ckt, Fig. 11	1	1		

List 2 - Equipment required in addition to list 1 when connection to ten additional outgoing trunks (10 to 19) is required.

	<u>Wire</u>	<u>Equip</u>	<u>Notes</u>	<u>See</u>
Concentrating Ckt, SD-96524-01:				
Trunk Switch, Fig. 2	0	4	F	
Outgoing Trunk Pref, Fig. 3	0	1		
Omit 99A Apparatus Blank	0	1	E	

List 3 - Relay equipment only required in addition to lists 1 and 2 to serve each additional 20 coin zone trunks (40 to 59) or (60 to 79) beyond 40. (See note G.)

	<u>Wire</u>	<u>Equip</u>	<u>Notes</u>	<u>See</u>
Concentrating Ckt, SD-96524-01:				
Coin Zone Trunk Tens Pref, Fig. 4	0	2		
Omit 99A Apparatus Blank	0	4	E	

List 4 - Relay equipment only required in addition to lists 1, 2, and 3 when connection to ten additional outgoing trunks (20 to 29) is required. (See note H.)

	<u>Wire</u>	<u>Equip</u>	<u>Notes</u>	<u>See</u>
Concentrating Ckt, SD-96524-01:				
Outgoing Trunk Pref, Fig. 3	0	1		
Omit 99A Apparatus Blank	0	1	E	

List 5 - Equipment and wiring per SD-96524-01, Fig. 5 required in addition to list 1 when overflow registration is required in step-by-step offices with automatic message accounting.

List 6 - Equipment and wiring per SD-96524-01, Fig. 6 required in addition to list 1 when operation with automatic trunk test circuit is required. (Provide in step-by-step offices with automatic message accounting only.)

Notes

A. A list 1 frame consists of the framework, fuse panel, ground bar, frame terminal strips, jack, key, and lamp panel, the crossbar switches, multi-contact relays together with the associated mounting details, terminal strips, horizontal multiple strapping, and apparatus blanks, outgoing and coin zone trunk preference relays together with the concentrator general purpose relays, resistors, etc, all of which are interconnected by a frame local cable to provide a basic concentrator frame arranged to serve 40 coin zone trunks and 20 outgoing trunks and equipped to serve 40 coin zone trunks and ten outgoing trunks.

B. Crossbar switches designated A00, B00, A01, and B01.

C. The strap wire multiple required for the TSO to TS2 test relays shall be continuous across each horizontal row of three relay positions and the associated TS terminal strip. Multiples

**J99256, ISSUE 4**  
**ISS 4, SECTION 814-510-151, 815-039-150, 816-720-150**

of the type having insulated crossband spacers shall be provided.

D. The strap wire multiple required for the tens relays (TAO-7) and (TBO-7) shall be continuous across each horizontal row of eight TA- relays and the associated TA terminal strip and eight TB- relays and the associated TB terminal strip. Multiples of the type having insulated crossband spacers shall be provided.

E. The 99A apparatus blanks included in list 1 shall be equipped in row A, positions 5, 6, 12 to 15, and row B, positions 12 to 15. These apparatus blanks shall be omitted as indicated when list 2, 3, or 4 is equipped.

F. Crossbar switches designated A10, B10, A11, and B11.

G. When more than 40 coin zone trunks are to be served, list 3 per 20 coin zone trunks and the first supplementary coin zone concentrating frame, J99256B, equipped with the necessary associated crossbar switches are required.

H. When connection to more than 20 outgoing trunks is required, list 4 and the second supplementary coin zone concentrating frame, J99256C, equipped with the necessary associated crossbar switches are required.

J. Options for wiring only shall be connected as follows.

1. Wiring per SD-96545-01, "W" option to be connected when alarm sending is provided.

2. Wiring per SD-96545-01, "Z" option to be connected when alarm sending is not provided.

J99256B (AT&TCo Std) - First Supplementary Coin Zone Concentrating Frame

Equipment - J99256B-( )

Local Cable - ED-95084-( )

List 1 - Framework, assembly, equipment, and wiring for one first supplementary coin zone concentrating frame arranged for eight crossbar switches maximum equipped with four crossbar switches for serving 20 coin zone trunks. (40 to 59)

	<u>Wire</u>	<u>Equip</u>	<u>Notes</u>
Concentrating Ckt, SD-96524-01, Trunk Switch, Fig. 2	8	4	A,B
Miscellaneous Ckt for Concentrating Frame, SD-96545-01:			
48V Frame Test Battery Ckt, Fig. 3	1	1	

See  
Wire Equip Notes

Spare Jack Ckt, Fig. 4	1	1	
Remote Control Jack Ckt, Fig. 5	1	1	
Frame Talking Line Ckt, Fig. 6 (for panel and No. 1 crossbar office only) or	1	1	
Frame Talking Line Ckt, Fig. 7 (for step-by-step offices only)	1	1	

List 2 - Equipment required in addition to list 1 to provide four crossbar switches for serving 20 additional coin zone trunks (60 to 79).

See  
Wire Equip Notes

Concentrating Ckt, SD-96524-01, Trunk Switch, Fig. 2	0	4	C
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Notes

A. A list 1 wired frame consists of the framework, ground bar, frame terminal strips, and the crossbar switches all of which are interconnected by a frame local cable to provide a supplementary coin zone concentrating frame arranged to serve 40 coin zone trunks and equipped to serve 20 coin zone trunks. The necessary associated relay equipment required for each 20 coin zone trunks is located on the basic coin zone concentrating frame and shall be ordered per J99256A, List 3.

B. Crossbar switches designated A02, B02, A12, and B12.

C. Crossbar switches designated A03, B03, A13, and B13.

J99256C (AT&TCo Std) - Second Supplementary Coin Zone Concentrating Frame

Equipment - J99256C-( )

Local Cable - ED-95084-( )

List 1 - Framework, assembly, equipment, and wiring for one second supplementary coin zone concentrating frame equipped with eight crossbar switches to provide for connection to ten outgoing trunks (20 to 29).

	<u>Wire</u>	<u>Equip</u>	<u>Notes</u>
Concentrating Ckt, SD-96524-01, Trunk Switch, Fig. 2	8	4	A,B
Miscellaneous Ckt for Concentrating Frame, SD-96545-01:			

**J99256, ISSUE 4**  
**SECTION 814-510-151, 815-039-150, 816-720-150**

	<u>Wire</u>	<u>Equip</u>	<u>See</u> <u>Notes</u>
48V Frame Test Battery Ckt, Fig. 3	1	1	
Spare Jack Ckt, Fig. 4	1	1	
Remote Control Jack Ckt, Fig. 5	1	1	
Frame Talking Line Ckt, Fig. 6 (for panel and No. 1 crossbar office only) or	1	1	
Frame Talking Line Ckt, Fig. 7 (for step-by-step offices only)	1	1	

List 1 - Assembly, equipment, and wiring for one fuse panel unit (16-fuse capacity) per SD-96524-01 and SD-96545-01, Fig. 1 for concentrating frame for step-by-step offices.

J99256AB (AT&TCo Std) - Fuse Panel Unit for Concentrating Frame for Panel and No. 1 Crossbar Offices

Equipment - J99256AB-( )

List 1 - Assembly, equipment, and wiring for one fuse panel unit (16-fuse capacity) per SD-96524-01 and SD-96545-01, Fig. 2 for concentrating frame for panel and No. 1 crossbar offices.

Notes

- A. A list 1 wired frame consists of the framework, ground bar, frame terminal strips, and the crossbar switches all of which are interconnected by a frame local cable to provide for connection to ten outgoing trunks (20 to 29). The necessary associated relay equipment required is located on the basic coin zone concentrating frame and shall be ordered per J99256A, List 4.
- B. Crossbar switches designated A20, B20, A21, B21, A22, B22, A23, and B23.

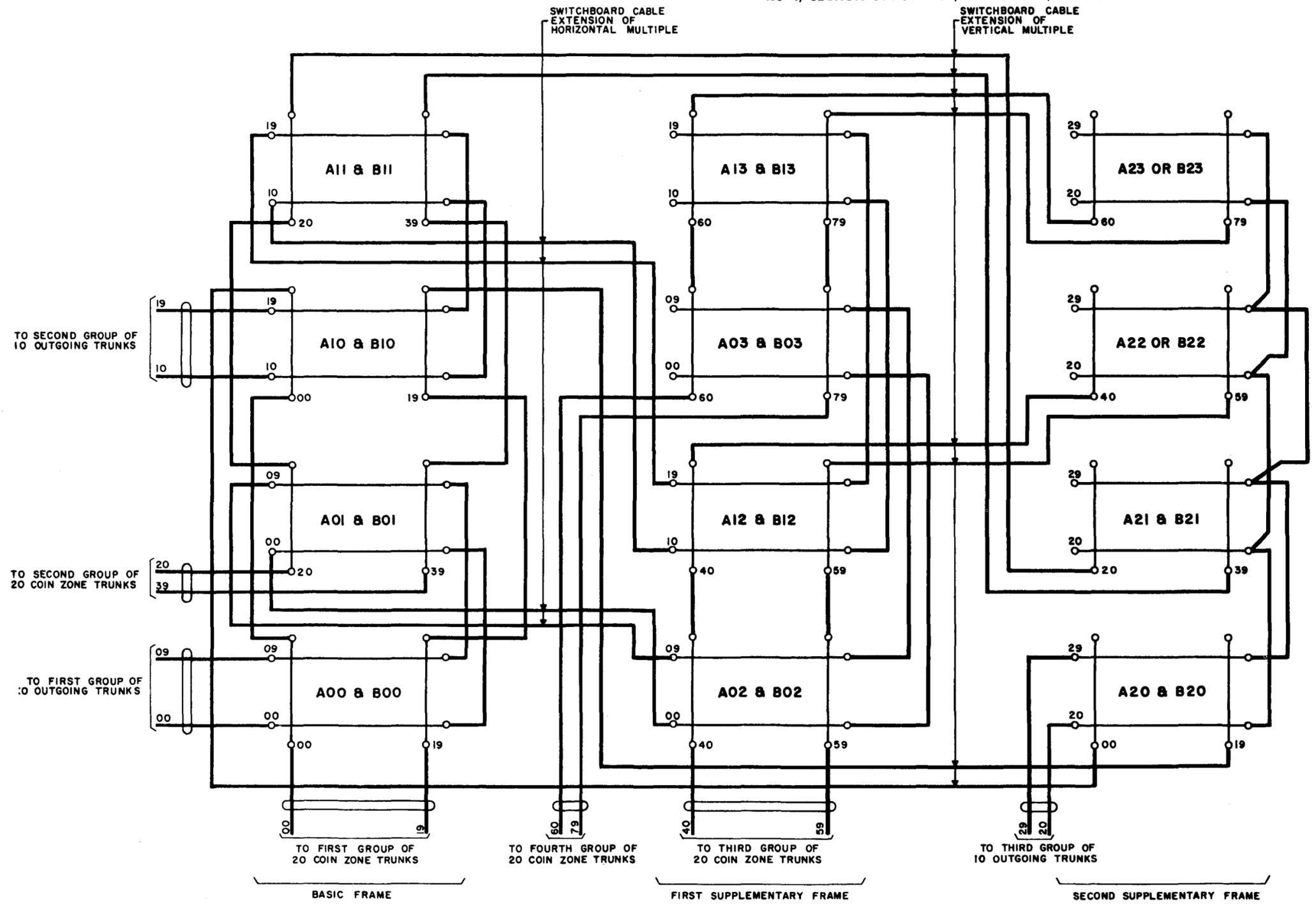
J99256AA (AT&TCo Std) - Fuse Panel Unit for Concentrating Frame for Step-By-Step Offices

Equipment - J99256AA-( )

5. GENERAL NOTES

Wiring and Cabling

- 5.01 The basic and supplementary frame local cables contain all of the leads for the frame, and no surface wiring is required.
- 5.02 The switchboard cable leads for the basic and supplementary frames terminate on both the frame terminal strips at the top of the frame and directly on the crossbar switch terminals.
- 5.03 J99256D through J99256Y are unassigned.



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Fig. 4 - Arrangement of Interconnecting Switch Multiples