

**END GUARDS AISLE PILOT LAMP SUPPORTS,
DISTRIBUTING POWER TERMINAL STRIP SUPPORTS,
RECORD BOOKS AND HOLDERS,
SPARE FUSE MOUNTINGS, AND PRINT DISPLAY BOARDS
EQUIPMENT DESIGN REQUIREMENTS
NO. 1 AND TANDEM CROSSBAR AND NO. 4 TYPE TOLL SWITCHING SYSTEMS**

1. GENERAL

Scope

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for end guards, aisle pilot lamp supports, distributing power terminal strip supports, record books and holders, spare fuse mountings, and print display boards used in crossbar system No. 1, crossbar tandem, and in toll switching system No. 4A.

1.02 This specification is being reissued to add a new BSP division number 818-080-150, and to bring it into conformity with the general Plant Series plan.

Description

1.03 The end guard is a sheet metal, cabinet-type structure attached to the ends of a line of frames to protect apparatus on the frame from being injured by rolling ladders and wagon-type test sets, and to mount and enclose miscellaneous equipment items required on a frame row basis. This equipment consists of distributing power terminal strips, grouping terminal strips, frame lighting switches, aisle pilot lamps, emergency alarm station box, safety-fuse cabinet, and spare fuse holders together with the associated wiring. End guards for the district junctor grouping frame, double-sided line distributing frame, main distributing frame, and message register rack are covered in their respective requirement specifications.

1.04 *The terminal strip support* consists of a 1/2" by 1/2" bar which is attached by brackets to the rear plate of the end guard. The terminal strips are clamped to this vertical bar by means of "U" shaped details, the one at the top of each terminal strip also mounting a fanning ring. These details are used for mounting distributing power or grouping terminal strips in an end guard which is located approximately in the center of the related group of major frames as covered in the associated engineering requirements for switchboard power cabling. When distributing power terminal strips are required at future frame locations where no end guard is initially available, they are mounted horizontally under the frame cable rack as shown on the associated support drawing.

1.05 *Frame-aisle pilot lamps* are visible signals to indicate trouble on the frames in that aisle and are of different colors to indicate the urgency and type of trouble. They mount in the end guard at the cross-aisle end of the line of frames and the lamps, protruding through the cover of the end guard, are visible throughout the length of the cross aisle. Provision is made for four lamps colored red, green, white, and amber.

1.06 *Cross-aisle Pilots:* In addition to the frame aisle pilot lamps, pilot lamps are provided at each end of the cross aisles in which the frame pilot lamps appear. These lamps mount on the outer or wall side of the frame lines so as to be visible in the outside lateral aisles as well as in the cross aisles. When a case of trouble occurs in a frame aisle, a signal appears on the frame aisle pilot lamp and at the same time similarly colored cross-aisle lamps are lighted. In addition to the four cross-aisle

pilots, a fifth lamp is provided which is under control of a switching key. This is a yellow lamp and indicates trouble on another floor which is unattended and has had its alarms transferred.

1.07 Exit Pilots: These are yellow lamps which are located at all exits normally used by the maintenance force to indicate trouble on other floors.

1.08 Frame and aisle designations are stamped on the sheet metal of the end guard to indicate the frames in that row and the aisle number.

1.09 The 11A fuse holder is a metal box, which is mounted in a recessed opening in the end guard at an accessible height from the floor. It contains racks for mounting spare 35-type alarm fuses.

1.10 Spare fuse mountings arranged to occupy recessed openings in the cabinet-type end guards are available for spare 100-ampere main aisle fuses and spare 20-ampere frame fuses. The mounting for main aisle fuses includes one 100-ampere fuse head; that for the frame fuses includes two 20-ampere fuse heads.

1.11 The 50A holder is a metal box, which is mounted in a recessed opening in the end guard at a convenient height from the floor. It contains racks for storing the 298A or 349A make-busy plugs while not in use.

1.12 Lighting Switches: The cabinet-type end guard also accommodates flush mounted control switches for frame and transverse aisle lighting as covered in the engineering requirements for frame lighting equipment. When a district junctor grouping frame is located at the cross-aisle end of two lines of crossbar frames, the lighting switches are located on the end guards of the crossbar frames rather than on the end guard for the grouping frame.

1.13 Emergency Alarm Station Box: A station box for the emergency alarm system can be mounted in a recess in the end guard, and is furnished as covered in the engineering requirements for the emergency alarm systems.

1.14 Safety-fuse Cabinet: A fuse cabinet, containing fuses for the battery feeders for a line of frames, is mounted on the end guard of each line-up as covered in the associated power

equipment specification. When a district junctor grouping frame is located at the main cross-aisle end of two lines of crossbar frames the fuse cabinets are mounted on auxiliary supports fastened to the frame or main cross-aisle cable rack.

1.15 The auxiliary safety-fuse cabinet support is a sheet metal detail for supporting the safety-fuse cabinet from the frame cable rack on the cross-aisle end of an incomplete row of frames when there is no frame and end guard at that point. This cabinet will later be transferred to the end guard when the row is completed.

1.16 Loose leaf record books are provided at the following frames for circuit and equipment assignment information that cannot readily be stamped on the respective frames, and is needed for maintenance and trouble tracing purposes:

Miscellaneous fuse bays

Office interrupter frames

Floor alarm frame in No. 4A toll switching offices

1.17 Record book holders are furnished as follows: at fuse bays and at the No. 4A toll switching floor alarm frame, the holder is assembled in the removable cover plate on the sheet metal frame base. At interrupter frames, because of possible oil contamination from the drive motors, the holders are not in the frame base but are mounted at a convenient height at the right of the interrupters.

1.18 Print display boards are furnished in locations determined by the telephone company for the mounting and display of the more important central office circuits for convenient use by the maintenance force. The boards are located in accordance with requirements given on a floor plan data sheet; fluorescent lighting standards are covered in J85505.

Subdivisions of Equipment

ED-25269-01 — DPTS, Safety Fuse Cabinet,
and Aisle Pilot Lamp
Mounting Supports When End
Guard is Not Available

ED-25528-01 — Details For Closing
Unequipped Frame Space

ED-25529-01 — Guard Rail Junction Details

ED-90019-01 — Record Book and Holder —
Frame Mounted

ED-91261-01 — Record Book Holder in Frame
Base

ED-91265-01 — Mounting of Aisle Pilots
and Frame Designation Plate
on End Guards of Distributing
Frames

ED-91423-01 — Cabinet-type End Guard
Assembly

ED-92018-01 — Print Display Boards

ED-96188-01 — Pilot Lamp Mountings and
Supports

2. SUPPLEMENTARY INFORMATION

816-000-000 — No. 1 Crossbar System Index

817-000-000 — Tandem Crossbar System Index

818-000-000 — No. 4 Type Toll Switching Sys-
tems Index

BSP — Gen. Equip. Req. — Auxiliary Framing

J20150 (816-015-150) — Switchboard Power
Cabling — No. 1 Crossbar

J20152 (817-035-150) — Switchboard Power
Cabling — Tandem Crossbar

J28350 — Emergency Alarm Systems

J28351 (816-023-150) — Floor Alarm Frame —
No. 1 Crossbar

J28352 (817-740-150) — Floor Alarm Unit —
Tandem Crossbar

J60101 (818-030-150) — Switchboard Power
Cabling — No. 4A Toll Switching

J67441 (818-780-150) — Floor Alarm Frame —
No. 4A Toll Switching

KS-5534 — Safety-type Fuse Equipment

J85505 — Fluorescent Lighting

KS-5556 — 20-ampere Alarm-type Fuse Mtg

Floor Plan Data — Print Display Board —
Sect. 7.3, Sheet 8

3. DRAWINGS

ED-25269-01 — Supports for DPTS, Aisle Pilot,
and Main Aisle Pilot Mountings,
and Safety Fuse Cabinet When
End Guards are Not Available

ED-25345-01 — Typical Stamped Designations
on End Guards

ED-25528-01 — Details for Closing Unequipped
Frame Space

ED-25529-01 — Guard Rail Junction Details

ED-90019-01 — Record Book and Holder —
Surface Mounted

ED-91261-01 — Record Book Holder — Frame
Base Mounted

ED-91265-01 — Mounting of Frame Designation
Plate on End Guards of
Distributing Frames

ED-91423-01 — Cabinet-type End Guard
Assembly

ED-92018-01 — Print Display Boards

ED-96188-01 — Audible and Visual Alarm
Signal Mountings — Pilot Lamp
Mountings

4. EQUIPMENT

***ED-25269-01 — DPTS, Safety Fuse Cabinet, and
Aisle Pilot Lamp Mounting
Supports When End Guards are
Not Available***

Group 3 — DPTS mounting when end guard is
not available

Group 4 — Details for supporting auxiliary sup-
port from frame cable rack

Group 5 — Details for supporting auxiliary sup-
port from cross-aisle cable rack or at
end of DJG frame

Group 6 — Detail for supporting pilot lamp
mounting on auxiliary support when
end guard is not available

Group 7 — Auxiliary support for safety fuse
cabinet — auxiliary framing 2" above
top of frames

***ED-25528-01 — Details for Closing Unequipped
Frame Space***

Groups 1 to 9 — Details as required for closing
unequipped frame spaces

ED-25529-01 — Guard Rail Junction Details

Groups 1 to 40 — Junction details as required between 10" crossbar frames and 1' 0", 1' 3", or 1' 8" frames of other systems, with varying space between frameworks being junctioned

ED-90019-01 — Record Book and Holder

Group 3 — Fuse record book

Group 7 — Interrupter record book

Group 8 — Interrupter record book — backward tracing

Group 9 — Alarm relay record book

Group 10 — Holder for office interrupter frame

ED-91261-01 — Record Book Holder for Fuse Bays and No. 4A Toll Switching System Floor Alarm Frame

Group 1 — Record book holder

ED-91265-01 — Mounting of Frame Designation Plate on End Guard of Distributing Frames

Group 3 — Two frame and aisle designation plates and mounting details for district junctor grouping frame

Group 5 — One frame and aisle designation plate and mounting details for double-sided LDF

ED-91423-01 — Cabinet-type End Guard Assembly

Group 1 — End guard complete — 10" width

Group 4 — DPTS support on end guard

Group 5 — Fanning ring and mounting details for terminal strip

Group 6 — End guard complete — 10" width — for mtg 2" out from frame upright

Group 7 — End guard complete — 10" width — 3-1/2" out from frame upright

Group 8 — End guard complete for single-sided distributing frame having 10" base

ED-92018-01 — Print Display Boards

Groups 1 to 17 — Print display boards as required

ED-96188-01 — Pilot Lamp Mountings and Supports

Group 1 — 4-lamp aisle pilot lamp mounting for cabinet-type end guard

Group 6 — 4-lamp aisle pilot lamp mounting for open-type end guards

Group 9 — 5-lamp main aisle pilot lamp mounting for cable rack support

Group 13 — 4-lamp pilot lamp mounting for wall or column — conduit from cable rack

Group 14 — 5-lamp pilot lamp mounting for wall or column — conduit from cable rack

Group 15 — 8-lamp pilot lamp mounting for wall or column — conduit from cable rack

Group 16 — 10-lamp pilot lamp mounting for wall or column — conduit from cable rack

5. GENERAL NOTES

End Guards

5.01 End guards shall be furnished at both ends of each row of crossbar frames, relay rack, and distributing frame, and of isolated individual frames, except that no end guard is required on the end of a frame or rack located a distance of 8" or less from a wall or column. (See paragraph 5.02.)

Details for Closing Unequipped Frame Space

5.02 Where a space occurs between frames in the same line-up, due to an unequipped intermediate frame, closing details per ED-25528-01 shall be furnished instead of end guards, where such spaces do not exceed approximately 3' 0". Normally this condition occurs where provision is made for future frames such as office extension frames or marker route relay bays. Where the intermediate space exceeds a length of about 3' 0" or where the space is needed as a passageway, end guards shall be furnished. These are available for use elsewhere in the office when the intermediate space is later occupied by frames.

Guard Rail Junction Details

5.03 Where 10" crossbar frames are required to line up with frames having 1' 0", 1' 3", or 1' 8" guard rail widths the frames shall be junctioned as shown on drawing ED-25529-01.

Aisle Pilot Lamps

5.04 One frame aisle pilot lamp mounting per ED-96188-01, G1 equipped with lamp sockets and lamps as required shall be mounted on end guards bordering on the main cross aisle as covered in the associated requirement specifications for the floor alarm frame or floor alarm unit. When an end guard is not available on the cross aisle due to an incomplete line of frames, the pilot lamp mounting shall be located on the auxiliary fuse cabinet support using G6 of ED-25269-01. Mountings per ED-25269-01, G6 and G7 may be used to line up the pilot lamps in aisles where the frames are indented from the cross aisle and multiple aisle pilots are called for by the telephone company.

5.05 Two aisle pilot lamp mountings and mounting blocks per ED-96188-01, G6 equipped with lamp sockets and lamps as required shall be mounted on the end guard of the district junctor grouping frame when located on the cross aisle in which frame aisle pilot lamps appear.

5.06 One main cross-aisle pilot lamp mounting and support details per ED-96188-01, G9 equipped with lamp sockets and lamps as required shall be mounted at each end of the cross aisle in which frame aisle pilots appear and so located as to be visible from the outside aisles as well as the cross aisles.

5.07 On each floor, exit pilots shall be furnished for each exit normally used by the maintenance force, one pilot lamp for each other floor associated with the alarm system. These lamps are mounted on the pilot lamp mountings and supporting details covered by ED-96188-01, G13, G14, G15, and G16, which are fastened to a wall or column adjacent to the exit as directed by the telephone company. The associated floor

number shall be stamped on the bracket for each lamp as shown on ED-25345-01.

5.08 The lamps in the aisle and cross-aisle pilot mountings shall be equipped in the following order from bottom up: red, green, white, amber, and yellow. Requirements for the 5-watt colored pilot lamps are covered on ED-96188-01.

5.09 Aisle pilot lamps shall be cabled to the distributing power terminal strip as covered in the associated engineering requirements for switchboard power cabling.

Auxiliary Fuse Cabinet Support

5.10 The auxiliary support ED-25269-01, G7 shall be furnished for mounting the safety-fuse cabinet when an end guard is not available on the cross aisle due to an incomplete line of frames. Details per ED-25269-01, G4 shall be furnished for supporting the auxiliary support from the frame cable rack. When a frame cable rack is not available or when auxiliary supports are required at the district junctor frame, details per ED-25269-01, G5 shall be furnished.

Distributing Power Terminal Strip Support

5.11 DPTS supports per ED-91423-01, G4 shall be furnished as required. When no end guard is available due to an incomplete line of frames, the terminal strips shall be supported from the frame cable rack by means of details per ED-25269-01, G3, leaving the cabling long enough to swing the terminal strips into a vertical position in the end guard when the latter is moved into its ultimate location.

5.12 *Frame designations* shall be stamped on the surface of the cabinet-type end guard cover as shown on ED-25345-01. Furnish designation plates per ED-91265-01, G3 and G5 for the district junctor grouping frame and the double-sided LDF. Where the end guard is omitted due to a building column coming between the main cross aisle and frames in line with the column, the frame designations and aisle number shall be stamped directly on the column, or they may be stamped on a frame designation plate per P-427187 fastened to the column, as determined by the telephone company.

J25551, ISSUE 6
SECTION 816-040-150, 817-060-150, 818-080-150

5.13 11A fuse holders for 35-type alarm fuses shall be furnished and mounted at the end of each fuse bay and at alternate ends of alternate lines of frames starting at the fuse bay and proceeding in one or both directions as required. This assumes that all fuse bays will be located at ends of lines. If a fuse bay is located within a line, a holder shall be located on the end of such line as near the fuse bay as possible.

5.14 Spare 100-ampere fuses shall be mounted in the end-guard fuse holder cutout using mounting per KS-5534, List 7. Provide two mountings per main cross aisle except provide four where aisles are more than two building bays long.

5.15 Spare 20-ampere frame fuses shall be mounted in the end-guard fuse holder cut-over using mounting per KS-5556, List 3. Provide one mounting (two fuses) per main cross aisle except provide two mountings (four fuses) where aisles are more than two building bays long.

5.16 50A holder for make-busy plugs shall be mounted at alternate ends of alternate lines of frames other than those frame ends used for mounting the 11A fuse holder (Par. 5.13) and those mountings used for the spare 100-ampere fuses and the spare 20-ampere fuses. (See par. 5.14 and 5.15.) If sufficient space is not available in the main cross aisle for mounting the 50A holders, they may be mounted in the end guards at the other end of the frame line-ups.

Record Books

5.17 A fuse record book per ED-90019-01, G3 shall be furnished at miscellaneous fuse bays when the fuse and lamp numbering is such that it cannot readily be stamped on the panels.

5.18 When one or more panels in a bay require the use of a fuse record book, all the panels in the bay shall be stamped only with the fuse capacities, row numbers, and fuse and lamp position numbers. The row numbers, fuse capacities, circuit names, numbers, etc, shall then be placed in the book for all fuse panels.

5.19 One fuse record book shall be furnished for each line-up containing fuse bays.

5.20 Record books are also furnished for the office interrupters in No. 1 crossbar, crossbar tandem, and No. 4A toll switching offices, and for the No. 4A toll floor alarm frame, as covered in the respective equipment requirement specifications.

Record Book Holders

5.21 A record book holder per ED-91261-01, G1 shall be furnished for each fuse record book and mounted in the first fuse bay of the line-up. The same holder is furnished for the No. 4A toll switching floor alarm frame. Each office interrupter frame is equipped with a holder per ED-90019-01, G10.

REASONS FOR REISSUE

1. To change the application of the specification as given in the title and paragraph 1.01 from crossbar systems general to crossbar systems No. 1, tandem, and No. 4A toll switching.
2. To include in title and body of specification information on print display boards.
3. To include paragraphs 1.11 and 5.16 on No. 50 holder.
4. Under record books, to include information on books and holders for office interrupter frames and No. 4A toll switching floor alarm frame.
5. Under part 4 ED-25269-01, to omit G1 which was for early offices having the auxiliary framing 1" above the frames; to change the title of G7 to cover the present standard of 2" between top of frames and the auxiliary framing.
6. Under part 4 and ED-91265-01, to include G5 for the double-sided LDF and reference to this group in paragraph 5.12; to omit G1, replaced by ED-96188-01, G6; and to omit G4 because open-type end guards are no longer used on the message register rack in No. 1 crossbar offices.

J25551, ISSUE 6
ISS 6, SECTION 816-040-150, 817-060-150, 818-080-150

7. Under part 4 to specify ED-96188-01, G1 in place of ED-91423-01, G2 for aisle pilot mountings in cabinet-type end guards; to specify ED-96188-01, G13, 14, 15, and 16 for exit pilots in place of ED-90697-01, G19; to specify ED-96188-01, G6 for aisle pilots on DJG frame in place of ED-91265-01, G1; and to specify ED-96188-01, G9 for main aisle pilots in place of ED-25269-01, G8.
8. In paragraph 5.12 to cover requirements for frame designations when column prevents use of end guard as a stamping surface.
9. To make minor revisions in text.

Bell Telephone Laboratories, Inc.

Dept. 3320